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ART OF MEMORY

BEING A

COMPREHENSIVE AND PRACTICAL SYSTEM OF MEMORY CULTURE

BY

HENRY H. FULLER

"Si quid novisti rectius istis, candidus imperti; si non, his utere mecum."

—HORACE

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1898

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Printed, Electrotyped and Bound
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To

MY FIRST FRIEND AND BEST—EVER ZEALOUS FOR,
FAITHFUL AND KIND TO ME—
TO MY NEAREST AND DEAREST—EVER LOVING,
TENDER AND HELPFUL TO ME—
TO ONE WHO, IN HER PURE NATURE AND
UNSELFISH LIFE, HAS EVER BEEN A
BLESSING TO THOSE AROUND HER—

My Mother,

TO HER IN TOKEN OF MY APPRECIATION OF HER,
MY AFFECTION FOR HER, AND MY GRATITUDE
FOR ALL THAT SHE HAS BEEN TO ME
THROUGH THE YEARS OF MY LIFE,
I DEDICATE THIS BOOK.

CONTENTS

CHAPTER I

THE BLESSINGS OF MEMORY - - - - - 3

CHAPTER II

WHAT MEMORY IS - - - - - - - 13

CHAPTER III

MARVELS OF MEMORY - - - - - - 32

CHAPTER IV

MNEMONICS, PAST AND PRESENT - - - - 58

CHAPTER V

ATTENTION - - - - - - - - 98

CHAPTER VI

ASSOCIATION - - - - - - - 109

CHAPTER VII

CLASSIFICATION OF MEMORY - - - - - 134

CHAPTER VIII

LOCALITY - - - - - - - - - 144

CHAPTER IX

FORM—COLOR - - - - - - - - 168

CHAPTER X

FIGURES - - - - - - - - - 180

CHAPTER XI

HISTORICAL DATES - - - - - - - 201

CHAPTER XII

EVENTS—FACTS - - - - - - - 289

CHAPTER XIII

LITERATURE—DRAMA—DISCOURSE - - - - 300

CHAPTER XIV

ANECDOTE - - - - - - - - - 317

CHAPTER XV

DICTION - - - - - - - - - 349

CHAPTER XVI

PROPER NAMES - - - - - - - - 383

CHAPTER XVII

MUSIC - - - - - - - - - 410

CHAPTER XVIII

VAGARIES OF MEMORY - - - - - - 446

Mnemosyne

Terpsichore Polyhymnia

Melpomene Calliope

Euterpe Urania

Thalia Erato

Clio

CHAPTER I.

THE BLESSINGS OF MEMORY.

"A man's real possession is his memory; in nothing else is he rich, in nothing else is he poor."

ALEXANDER SMITH.

"Memory is the only Paradise from which we cannot be driven away."

RICHTER.

"Grant but memory to us and we can lose nothing by death."

WHITTIER.

"The heart hath its own memory, like the mind."

LONGFELLOW.

"Memory tempers prosperity, mitigates adversity, controls youth, and delights old age."

LACTANTIUS.

"I would rather have a perfect recollection of all I have thought and felt in a day or a week of high activity than read all the books that have been published in a century."

EMERSON.

"Hail, Memory, hail! in thy exhaustless mine
From age to age unnumbered treasures shine!
Thought and her shadowy brood thy call obey,
And place and time are subject to thy sway!"

ROGERS.

"Bliss in possession will not last;
Remembered joys are never past;
At once the fountain, stream and sea,
They were, they are, they yet shall be."

JAMES MONTGOMERY.

"When Time, which steals our years away,
Shall steal our pleasures, too;
The memory of the past will stay,
And half our joy renew."

THOMAS MOORE.

In every age of civilized life, reaching from the momentons present back through the teeming centuries to that far-off day when the first gray gleams of History broke forth over the mighty ocean of Time, Mnemosyne, the Goddess of Memory, has been accorded a most exalted altar in the temple of human progress,—that intellectual fane wherein man has sought to propitiate the powers of the understanding, and on whose walls is inscribed the story of his work,—a temple whose foundations are upheld by her, as Atlas was fabled to uphold the heavens. As in Grecian mythology, Mnemosyne was honored as the mother of the nine Muses, so, too, throughout all the ages Memory has been universally recognized by civilized mankind as a vital factor in the intellectual development of the human race; and now at the close of this nineteenth century, the inestimable value to its possessor, of a well trained memory is more justly appreciated than perhaps has ever before occurred in the world's history—

to such vast proportions has the field of knowledge expanded, and so exacting have thus become the demands upon the memory of whomsoever would gain and maintain a more than mediocre station in the world of intellect.

To him who can truly realize its intrinsic worth, a superior memory cannot but be prized as one of the most priceless blessings a bountiful Providence can bestow. Without Memory, progress in any form or degree whatsoever, would be unknown; by it is man's knowledge measured and in a great degree his happiness,—for, next to the joys of Anticipation, those of Memory form the most satisfying and enduring that are enshrined within the heart of man. By a beneficent mental alchemy, whose process is one of the mysteries of our nature, the asperities of life become gradually softened in the memory with the flight of years,—experiences whose contemplation at the time may have been not only unpleasant, but even painful, being ultimately transmuted into subjects of not unhappy retrospect. The faults and follies, and even vices, of those whom we once knew grow more and more palliated in the memory with the passing years. And persons whom we deem to have injured us, and for whom we formerly could entertain only feelings of dislike, and even hatred it may be, we come to think of in a spirit of tolerance, and perchance even kindness; such is the soothing influence of Time on the passions. And experiences which once cast a happy glow on the pathway of life become endowed with an ever-growing radiance

as the years pass by. Why all this is so we know not; we only know that it must be one of the happy compensations of life bestowed by a Divine Providence. Impressions of the past are not preserved in the memory with unvarying impartiality—however logical may seem the conclusion that they should be; and that there exists this curious quality in the operation of the mental forces is one of the fortunate attributes of human nature. As in fancy we look back through the vista of years, our happy experiences are viewed from the small end of the telescope as it were, and our unhappy ones as from the opposite end. The tendency of the memory is to efface by degrees the unwelcome details of past experiences, retaining only those features which have shed a happy and inspiring influence on the mind and senses, and investing those features with an added beauty and brightness as they recede yet further and further into the great unmeasured Past.

The possessor of a retentive memory may indeed felicitate himself that within him is a fount of perennial purity and beauty, whose gushing waters cannot but invigorate and delight his spirit as he wends his steps along the devious pathway of this strange life, amid its lustrous lights and sombre shadows, now climbing the majestic steeps and anon descending to the gentle slopes and smiling valleys,—a fountain which has gathered impulse from the capacious reservoir of youthful incident, augumented by the plenteous streams of knowledge and experience afforded by the after-scenes of life. And when at last the evening comes, and those

activities that occupied the body and the mind in days gone by, no longer now engage the passing hours,—then Memory indeed may exercise its noblest, its most grateful mission. And if, perchance, it has been stored from time to time with glowing thoughts and fancies from the heart and mind of genius; with grains of wisdom from the brain of scholar or philosopher; with gems of grace and grandeur from the lips of eloquence or the pen of poet; with unfading images of beauty from the world of Art; then can its possessor revel in the wealth of thought and sentiment and imagery which the passing years have stored away, and Memory becomes indeed a source of untold happiness,—a sweet and ample compensation for the sacrifices and the toils of other years,—a blessed and abiding solace in the "sear and yellow leaf," the even-tide of life, that period when, perchance, those energies once boasted by the heart and mind are known to them no more; when in what *is* or what *may be* is found, perchance, but little inspiration, but when the mind must occupy the passing hours in rumination over what *has been* and in summoning before the mental vision faces and forms and scenes and thoughts belonging to departed years. Then the heart must find its earthly joys in Memory, seldom in any earthly hope.

And if the treasures of a well-stored memory may yield so much of gladness to the mind and heart in this the autumn of life's days, what shall be said anent the springtime and the summer,—the period when this precious fund is being garnered in the memory?

Then to the joys of recollection is united the delight of acquisition. Then the wonders and felicities of Knowledge and of Fancy burst upon the mental vision with their all-pervading charm of freshness and of beauty, and with their more exalted blessing of bearing the most precious germ of intellectual and of moral growth. But besides the mental delights which are gained throughout life by the possession of a well cultivated memory, there are also the practical benefits to be derived thereby.

The man who, whether by the munificence of Nature, or through assiduous and intelligent cultivation, has acquired a teeming and a ready memory may well congratulate himself that a treasure is his which deserves to be prized far more than any possession whose value can be measured by the material and evanescent riches of this world. As the trained athlete, conscious of his surpassing strength and skill, is seldom reluctant to essay any proper task, however arduous, whose accomplishment is within the bounds of possibility, so the possessor of a carefully trained memory may well be justified in feeling no loss of confidence in his mental powers. Should he chance to cast his lot in the field of oratory or statesmanship, and an issue arise to be decided by oral argument, he is morally certain to be fully fortified at every point, whether of logic, fact, figure or date; and if the issue be with the pen, he is none the less prepared for the encounter, and can bring forth at will from the arsenal of his memory the weapons of logic, of citation and of satire which shall dis-

cover every vulnerable spot in his antagonist's armor. And the historian, the essayist or the descriptive writer is indeed vastly strengthened if he possess a ready memory; for in such case, no less than those already indicated, the knowledge gained and impressions formed through experience, observation and research cannot but prove an added force of inestimable value, ready to be put forth as occasion may require.

The most prosperous business man (other qualifications being equal) is he who has a superior memory for names and faces. In the case of him who would be a successful politician, the possession of this faculty is absolutely indispensable, reliance being placed, as is abundantly justified, on the weakness of human vanity. Eminence in some professions necessitates a copious memory of mathematical *formulae;* and in all lines of scientific and professional attainment a tenacious memory of words is, if not indispensable, at least most advantageous.

That man is justly considered a most desirable acquisition to the social circle who is reasonably well-informed on historical and current events; who can tell the main details of a story he has read, a discourse that he has heard, or a play which he has witnessed; who can illustrate a topic under discussion by an apt anecdote; and who, perchance, has a lavish fund of literary illustrations at his tongue's end, or possesses entertaining qualities from a musical point of view. Such a person cannot well fail to prove a valued ornament to society, an ever welcome guest at many a hearthstone;

and the real secret of it all is that he possesses a well stored memory, whose riches are ever a source of untold satisfaction to himself as well as a delight to those with whom he associates.

And the memory of childhood's days:

"When life seemed formed of sunny years,
And all the heart then knew of pain
Was wept away in transient tears."

What, indeed, shall we say of that peculiar sentiment which surrounds the far-off morn of life and weaves about it a web of romance which grows more and more fascinating as years pass on? Who that is not most lamentably lacking in that exalted grace of the soul, sensibility, does not cherish with never ceasing fondness the recollections of his boyhood's days? Who does not dwell with unalloyed rapture on those experiences of life's springtime that form so impressive a contrast with the cares and trials that beset the path of manhood's years!—how boldly are those scenes and incidents defined upon the mental vision!—in what glowing colors are they depicted! Commonplace indeed many of those experiences were, scarce worthy to be the subject of retrospect in the years to come, it may be; but yet how tenaciously do these episodes of the long ago cling to the memory,—their luster scarce obscured by the lapse of intervening years! Some holiday jaunt, some moonlight excursion, or some May-day frolic, imprints itself upon the memory in colors so refulgent as to seem insensible to the relentless touch of Time; and often some of the most trivial incidents and

prosaic experiences are better remembered, by far, than many important events of later years. We cannot live those days over again, it is true, but memory can revive their scenes and picture their details so vividly that it almost seems as if we again were gazing on the same delightful landscapes, treading the well-worn paths that knew our footsteps in those by-gone days, and looking on the same familiar faces as in the halcyon times of yore. And sometimes in the after years of life, while musing on those days gone by, how sweetly bursts upon the mental vision some long-forgotten scene, blooming forth in the most transcendent beauty! May not such a memory be likened to a gushing spring, whose limpid waters have escaped from some sly nook of Nature, far away, to course along through dark and devious channels, that seemed to have no end,—and then at last to reappear in all their sparkling loveliness, to gaze upon the same bright sun, the same blue sky, that once they looked upon amid the far-off hills and vales from whence they first sprung forth! And as the sun-lit, passive stream reflects so faithfully the objects which surround it,—so, too, the Memory, that priceless boon conferred by bounteous Providence upon man, has power to mirror forth the scenes of childhood with such fidelity that they seem imbued with all the rich and glowing hues of other days, and the intervening years appear as but a brief and narrow span; and as the scenes that childhood's days once knew are left in the receding Past yet more and more with each succeeding revolution of the wheel of Time, they seem, in the en-

chanting and abiding light of Memory, to grow more lustrous, and to shed a sweet and gentle fragrance on the eventide of life,—that period which we all would fain look forward to with that serene repose of mind, that sweet tranquillity of conscience which indulges in no dull repinings over wasted opportunities, nor in unavailing ruminations on the "Might have been." All these are among the blessings of Memory; and is not their attainment well worth the most earnest and persevering effort throughout life? Surely the intrinsic worth to its possessor of a highly cultivated memory of the mind and heart is infinitely greater than all the wealth which can be measured by the gross material standards of this world. The treasures of the Mind and Memory are on a plane far above the level of material riches; between the two there cannot be comparison, there can only be contrast, in which the latter to intelligent discernment are, as a matter of choice, but paltry,—are, too often, the carnal reward of misplaced effort, the badge of a soul's poverty. The true measure of riches is their power to confer happiness on their possessor; true happiness is that only which is substantial and enduring; many may seek it in worldly wealth, and few may therein find it, but none there are who, in their pursuit of happiness, can afford to regard with other than a sense of their surpassing excellence and sublime beauty, the blessings of Memory.

CHAPTER II.

WHAT MEMORY IS.

"All knowledge is but remembrance." BACON.

"That which constitutes recollection or an act of memory is the present image which a past sensation has left in us, an image which seems to us the sensation itself." TAINE.

"Memory is a primary and fundamental faculty, without which none other can work; the cement, the bitumen, the matrix in which the other faculties are imbedded. Without it all life and thought were an unrelated succession." EMERSON.

"There is no faculty of the mind which can bring its energy into effect unless the memory be stored with ideas for it to look upon." BURKE.

"Every organ—indeed, every area and every element—of the nervous system has its own memory." G. T. LADD.

"Memory is the golden thread linking all the mental gifts and excellences together." E. P. HOOD.

"Memory is the cabinet of imagination, the treasury of reason, the registry of conscience, and the council-chamber of thought." BASILE.

"Remembrance and reflection how allied!
What thin partitions sense from thought divide!"
POPE.

"What we miscall our life is Memory;
We walk upon a narrow path between
Two gulfs—what is to be, and what has been,
Led by a guide whose name is Destiny."
CHARLES LOTIN HILDRETH.

Quaint old Thomas Fuller, the pious, learned and witty divine, historian, biographer and poet, who lived in the seventeenth century, and whose writings occupied a position of marked eminence in the literature of his day, gave this definition of memory: "Memory is the storehouse of the mind, wherein the treasures thereof are kept and preserved."

Sir William Hamilton defines memory in this wise: "Memory is the power of retaining knowledge in the mind, but out of consciousness."

The following definition is given by Helvetius: "Memory is the magazine in which are deposited the sensations, facts, and ideas, whose different combinations form knowledge."

Dr. Johnson uses this terse expression: "Memory is the purveyor of Reason."

Many other great authors, also, have defined or aptly characterized the faculty of memory; but perhaps the most luminous definition of all is that given by Locke, in his *Essay Concerning Human Understanding:*

"Memory is the power to revive again in our minds those ideas which, after imprinting, have disappeared, or have been laid aside out of sight. * * * * When an idea again recurs without the operation of the like object on the external sensory, it is *remembrance;* if it be sought after by the mind, and with pain and endeavor found, and brought again into view, it is *recollection.*"

Memory is the *power* of reproducing in the mind former impressions, or percepts.

Remembrance and Recollection are the *exercise* of that power, the former being involuntary or spontaneous, the latter volitional. We *remember* because we cannot help it, but we *recollect* only through positive effort. The *act* of remembering, taken by itself, is involuntary. In other words, when the mind remembers without having *tried* to remember, it acts spontaneously. Thus it may be said, in the narrow, contrasted senses of the two terms, that we *remember* by chance, but *recollect* by intention, and if the endeavor be successful that which is reproduced becomes, by the very effort to bring it forth, more firmly intrenched in the mind than ever.

What causes remembrance is *allusion;* that which our senses apprehend from time to time is stored away in the mind with a greater or less degree of distinctness, the reproduction of any particular portion thereof being dependent upon the appearance of the consciousness of impressions sufficiently suggestive to call the former impressions forth. The distinctive province of recollection is to find the suggestion or clue by means of which an original impression may be revived. Present perceptions or impressions call up past ones: for instance, we see a person's face, or hear his voice, whereupon a mental image thereof is impressed on the mind and retained by it with greater or less fidelity for a period of indefinite length, depending mainly on the vividness and force of the impression; when we again see the same face or hear the same voice, another mental image is formed which at once recalls the original

one, and the two are intuitively seen to correspond, and thus we are said to *recognize* the person. The same is true of abstract ideas, and indeed of all mental conceptions; a former idea may appear in our mind again, or a present idea may, by similarity or contrast, suggest a former idea to us; thus an idea which has appeared in our consciousness may be reproduced if we only have at our command a suggestive idea with which to recall it. And the more of such suggestive ideas we have, the greater the probability that any particular idea can be recalled when desired.

And what relation does memory bear to understanding? It is nothing less than its very foundation-stone; upon this base the whole fabric of human knowledge, and even consciousness, must rest, for every conscious action of the mind is rendered possible only through a comparison of some past impression with a present one, and the more critical this comparison the more perfect must be the memory. If the original impression were to become effaced from the mind directly after being made, it would be of no more significance to the present consciousness than if it had never existed, for there would be nothing with which to compare the impression now present. Thus there could be no sensibility of change, for change involves action, and the mind could not act if each impression as it appeared in the consciousness at once vanished from recognition; for action of the mind is dependent upon its power to perceive the identity of a past impression on its reappearance, and to compare it with a present

one,—ideas, or conceptions, being formed through such comparison. And if memory is a prerequisite to consciousness and knowledge, it follows, perforce, that without its aid progress would be unknown to the human race: "enterprises of great pith and moment," in the realms of either the physical or mental, would "their currents turn awry and lose the name of action," for memory alone furnishes the nutriment which mind uses, and must use, for its own sustenance and development, and that there may be secured to its possessor the advantages deserved by intellectual, moral and material excellence. All our knowledge consists of what we remember or can recall, and our wisdom is in its rightful use. All genius or talent is built upon what mind originates, and it is impossible for mind to create except by the coöperation of memory; and as memory is the very basis of thought, it follows that the more perfect and intelligent the memory, the greater must be the power of thought.

We are always using the memory; there is not a conscious moment of our existence that it is not in action; every exertion of either physical or mental power is based upon the remembrance (using that word in its customary broad sense) of some previous act of a similar nature, and itself becomes the basis of some further act; in fact, everything that the senses take cognizance of becomes a memory, and it is the sum of these memories that constitutes the individual—the quality of the individual's mind and character depending on the quality and quantity of these memories so perceived by the

senses. Every person is a book, of feelings, of thoughts, of experiences—and, according to the distinctness and thoroughness with which the contents are written, becomes the utility of the volume. It is a book which can be made of either enduring, or only ephemeral, interest; of superior quality, or only commonplace: all depends upon the writer; the record can be either a brief or a copious one, the characters effaceable, or indelible; the volume can be a confused aggregation of impressions, from the important down to the insignificant, or it can be a chronicle whose details are intelligently arranged, chapter by chapter and paragraph by paragraph, all properly indexed and ready for convenient reference.

"How can the memory be improved?" may be asked. Through properly directed exercise. As by the intelligent practice of gymnastics we strengthen and develop our muscles, so do our memories increase in power and efficiency as we exercise them—which, if we should fail to do, must inevitably grow weaker. In both the physical and the mental world, to stand still really means to retrograde. A certain amount of exercise is necessary that our bodies or our minds may not *lose* in strength or quality; a still greater amount is essential if they are to attain higher development—and not the least important consideration is that this exercise should be properly directed.

Memory is a faculty to which man can by no means lay exclusive claim. It is perhaps no exaggeration to asseverate that every living thing possesses memory

in at least some degree—from the ant, which is never at a loss to distinguish its own particular hill from the thousands of others in the vicinity, to the carrier pigeon, that can wing its way for hundreds of miles from home, and return with unerring precision to the spot from whence it started; or the dog, whose wonderful faculty of remembering faces and places is a matter of universal cognizance. The thrilling story of Androclus and the lion has passed into history; and who is there that is not familiar with instance after instance of remarkable memory power, in one form or other, in the animal kingdom?

The infant very soon learns to distinguish its own mother from all others that come within the sphere of its consciousness; and this embryonic form of memory gradually develops, during the periods of childhood and adolescence, into higher forms, more and more removed from the instinctive. With added years comes the great battle of life, that constitutes what the world terms "experience," which, after all, is nothing more or less than a series of memories.

It is a well established law of our nature that whatever we take the greatest native interest in we remember the best; in other words, our memory grasps most tenaciously that for which it has the strongest *affinity*. As the loadstone attracts the piece of iron or steel, but not the bit of brass, so the memory intuitively seizes and retains that which has for it a natural attraction, while perchance some other object of contemplation no less worthy to be treasured in the memory,

leaves no more impress upon it than the shadow cast by some vagrant drifting cloud does upon the mountain's side. The truant school-boy is little likely to forget where the most desirable fishing-spot is located; in what especial trees the newest birds' nests may be found; where the most accessible melon patch is situated; or in what particular part of what particular orchard are growing the choicest apple-trees! The lover is not apt to quickly forget what his sweetheart said on the occasion when the all-important question was asked; and the miser can be relied upon to recollect just what persons are indebted to him, and the respective amounts, and to remember the nature and value of each particular item that constitutes his hoard.

It is a curious and suggestive fact that no two minds have exactly the same affinities, although there may be a general concordance among many minds. That in which a Linnæus or an Audubon becomes engrossed, may possess little attraction for a Kepler or a Herschel; or, that which absorbs the energies of a Stephenson or an Edison, a Darwin or an Agassiz may find of little interest. A Doré or a Gainsborough gazes upon a magnificent landscape and the whole is at once imprinted on his memory in unfading colors; a Euler or a Kant looks on the same landscape and it leaves scarce an impression on his mind: purblind is he to its grandeur and beauty; and

> "A primrose by a river's brim
> A yellow primrose is to him—
> And it is nothing more."

Under ordinary circumstances our memory of anything that we have seen or rightly apprehended in the first place, should be faithful, in so far at least as the main features are concerned. If there is a lack it ought only to be in completeness of detail, the cause of which lack is that not all of the details were originally grasped by the consciousness.

But where that which caused the original impression involved human action—and thus character and motive—our memory would be not essentially of the fact or occurrence itself, but of the interpretation we put upon it—which might be sometimes far from infallible. In such case, then, our memory would be self-created—simply a reproduction, with more or less fidelity, of a former state of consciousness, which latter might have no valid claim as reflecting with integrity the fact or occurrence in question.

Thus if a person has performed an act which meets with our approval, his subsequent acts we are likely to view with reference to our opinion of that first one, and we will unconsciously gloss over their defects and magnify their virtues, because we are prejudiced in the person's favor—whereas if his first act has not been to our liking we are likely to perceive little to commend in his future ones. So our memory of it all is in some degree our own creation. The very acts themselves are either modified or distorted, according to the standpoint from which we look at them, and thus the self-same acts may be carried very differently in one person's memory from what they are in that of another.

It is indeed a striking peculiarity of human nature that different people see the same thing with very different eyes. For instance, it is almost impossible to learn the true details of any great catastrophe—reports of eye witnesses vary so widely. No two persons give the same account of a battle: a description of even the great battle of Waterloo which will be generally accepted as reliable has yet to be written; read Gardner or Chesney and you have one account—read Thiers or Hugo and you have one radically different. When Sir Walter Raleigh was imprisoned in the Tower of London, a fracas occurred in the courtyard below, which was described to him immediately afterwards by several eye-witnesses, no two of whom, however, gave identical particulars. After trying in vain to learn the exact details, Raleigh exclaimed in despair: "Here am I, writing a History of the World—attempting to correctly portray events that happened thousands of years ago—when I find it impossible to gain a reliable account of a petty brawl that occurs under my very window!"

It is believed by many who have devoted more or less research to the subject, that nothing which has been apprehended by the mind at any time ever entirely escapes from the memory; that all which has ever been in the consciousness is imprinted in ineffaceable colors, and is subject to revival at any future time, under favorable conditions; that although the mutations of time and circumstance may cause other impressions to intervene between our present conscious-

ness and some former one, yet every inscription ever written on the mind is indestructible, and only awaits some fortunate turn of the wheel of memory to again appear in colors scarcely less glowing than of yore. Whether that theory be well-founded or not, it is certain that the brain has a most marvelous capacity for storing away impressions; and there is no question that this capacity may be increased to a wonderful extent by proper mental discipline. With intelligent minds, it is also a matter of common experience that occasionally there will pristinely fresh leap forth unbidden, from the memory, the minutest details of some incident that has been but vaguely remembered, if at all, during many years—a fact which seems to suggest that only the impulse of a touch, which may be accidental, on the appropriate secret-spring is needed to summon forth from the hidden chambers of the memory, as by Nature's magic, anything which has ever been there implanted.

While it is indeed true that no more than one idea or conception can occupy the mind at the same instant of time, yet there are conditions under which the mind can pass from one state of activity to another with a rapidity which after the event we can scarce believe possible. Being suddenly brought face to face with death is without question the most powerful means by which latent memories are caused to be revived, as well as more distinct memories intensified, all following each other with the most inconceivable quickness. Cowper has well said:

"How fleet is a glance of the mind!
Compared with the speed of its flight
The tempest itself lags behind,
And the swift wingéd arrows of light!"

It sometimes happens that the acts of a whole life-time which are of consequence, and many that are not, will be flashed across the screen of Memory with such lightning rapidity and with such distinctness as to seem like a vast panorama whose every detail is grasped by the mind in an instant of time. Steve Brodie, the noted high-bridge jumper, in describing his feelings while making his famous leap from the Brooklyn bridge, stated that it seemed as if, during the few seconds required for his descent to the water beneath, there passed through his memory all the acts of his life, in their proper order—some of which had not appeared in his recollection for years, and would all his life have remained dormant except for some extraordinary stimulus such as this. It is the almost universal experience of drowning persons who have been rescued at the last moment and resuscitated, that during the few moments just preceding the loss of consciousness, the memory suddenly grasps with a marvelous vigor the deeds of the life which seems about to end, and by some mysterious compelling intuition the sufferer is able and obliged to recognize at the same time, and more fully than ever before, the right or wrong of each particular act.

Dr. Holmes tells of a man who loaned several hundred dollars to another, for which the latter gave his

note. When the time for its payment came however, the note could not be found, its owner being unable to recollect where he had put it. The debtor, taking advantage of that fact, refused to pay, claiming that he had never given the note—and the owner was compelled to submit to the loss. Some years afterwards he happened to be bathing in the Charles river, and while doing so was seized with a violent cramp and with difficulty was rescued from drowning. On recovering he went at once to his book-case, took therefrom a book, and between its leaves found the missing note! In the history of his life which had flashed across his mental vision during those few moments, the act of putting the note into a certain book and placing the book in his book-case had been vividly represented. The note, with interest, was subsequently collected.

The theory has often been advanced, with more or less plausibility, that the possession of an abnormal memory is a hindrance to the ready operation of the reasoning powers: that the brain is clogged, as it were, with a vast accumulation of miscellaneous facts and ideas, so that the mind is unable to work with that perfect freedom necessary to insure originality of thought, and commensurate results.

Instances are cited in which the possession of great memory power has been unaccompanied by corresponding mental gifts, the inference being that a less retentive memory would have superinduced a greater vigor of mind, and that its possessor would therefore have attained a far higher eminence in the world of thought.

This is far from being susceptible of proof, however, for if a full memory be detrimental to intellectual productiveness, it should follow as a logical sequence that a vacant memory must be the best possible stimulant to mental activity. If this theory be correct it might be claimed with equal force that a small patch of ground is capable of yielding as abundant a harvest as a large one, or that a child can carry as heavy a load as an adult!

It is undoubtedly true that in many cases of phenomenal memory power nearly all the mental energies have been exerted in acquisition and little in original thought—based as that must be, on such acquisition; but unless, in any instance, this power of retentiveness is accompanied with at least a fair endowment of the creative faculty, a more positive and lasting reputation would be achieved by the continued development of that talent only which is the especial gift of nature, and not by an unprofitable division of the mental energies. Where the capacity for intellectual productiveness exists in only a slight degree, if at all, eminence in that line can hardly be expected, however marvelous may be the power of acquisition and retention; for Memory is one thing and Reason another.

The fact is that there is no substantial foundation to the theory that a copious memory impedes the flow of thought; history fairly teems with illustrations proving that exactly the reverse is the case. Intellectual greatness is not possible of attainment if there be lacking the foundation of a tenacious memory; the latter

is a prerequisite to the former; if he who has a richly stored mind possess not intellectual capacity, he will not under any circumstances; the material for thought to work with must be furnished by the memory—it can come from no other source; upon the power of recollection must depend that of creation, and he who has in his memory the most bounteous and best assorted store of well-prepared materials to draw upon will, as men are ordinarily constituted, have the most efficient ability to construct.

The only possible case in which an exuberant memory might be considered a hindrance to thought would be where the mental energies have been mainly spent in accumulation, and not enough in assimilation, in devouring without due attention to digestion—for there should be a proper equilibrium between the two in order that the best results may be attained; but even in the case of a person possessing the gift of a capacions memory it by no means follows that, had there been a less developed gift of memorizing, any notable result would have been achieved in the line of original thought.

Is it probable that a Mezzofanti, who could learn the greater part of a language in a single night; or a Cartaret, who knew the Greek Testament by heart, would have become more noted had a far greater portion of his mental force been applied to literary production? Is it likely that a Woodfall, who could listen to a debate in the House of Commons and reproduce the whole without having taken a single note—or an

Almansor, who could converse in twenty-seven languages—would have attained a greater measure of fame had he materially neglected the exercise of his wonderful powers and invaded the field of authorship? Take the case of Blind Tom, the negro prodigy, who could repeat a discourse of fifteen minutes' duration without understanding a word thereof, and songs in French or German after a single hearing, omitting not a word or note and imitating perfectly the style and expression of the singer; and who could perform on the piano a composition of as many as twenty pages heard for the first time; would he have been even an atom in the great world of letters? Surely not, and these illustrations only serve to show that abnormal memory power is a gift, and often dwarfs all the creative forces of the mind; he who possesses it is carried along as by a gigantic wave—it is his very life and being, overshadowing all else; his peculiar talent is absorption and imitation—not creation.

There is a close relation between memory and instinct; indeed, a highly cultivated memory is, in a sense, instinctive; that nature of undertaking which, on being essayed for the first time, may seem a severe task for the powers of the memory, becomes less difficult of execution the next time it is attempted, and continues to grow easier of accomplishment with each succeeding trial, until eventually the work is performed with a facility and exiguity of conscious effort that seems akin to the operation of instinct. A most *apropos* illustration of this peculiar property of the

memory is given by Mark Twain in his "Life on the Mississippi," in the narration of his experience in learning the vocation of a pilot. In the first days of his apprenticeship it was extremely difficult for him to discern and imprint on his memory even a fractional part of the details of river navigation essential for a pilot to be familiar with—the windings of the channel, contour of the shore, various land and water-marks along the route, etc.; but with practice his vision grew more acute and his memory of locality constantly increased in power, until at last each detail was seized by the memory almost unconsciously, and those features of landscape and water-course which at first were so difficult of discernment, as distinguished from the general surroundings, and seemed so impossible of retention by the memory, became at last absorbed by the recollection with the utmost ease.

Houdin, the great French conjuror, through long and intelligent practice, was able to pass rapidly by a toy-window and tell the names and location of nearly forty objects exhibited therein; and his son could excel even this marvelous feat; and the feat was done with scarce an appreciable effort.

Instances like those, and the case of an experienced railway conductor who can go through a long train of cars and remember the face of every passenger whose fare he has collected, and that of the Fifth Avenue Hotel waiter who daily receives and restores five hundred hats without making a mistake—serve to demonstrate the fact that, as the memory through sedulous

cultivation in any especial line attains a high degree of development therein, the task or undertaking which it at first accomplishes only by severely conscious endeavor is ultimately performed by almost unconscious action—yet all the more surely and faithfully by reason of the very spontaneity which marks it. It is through involuntary, rather than deliberate, action of the senses that the highest degree of excellence is attained in many kinds of physical and intellectual proficiency.

The skilled type-writer who has learned by long practice to touch his keys with such unerring precision, and the trained telegrapher who can click off his dots and dashes with such astonishing accuracy, perform their work in a great degree automatically.

The piano *virtuoso*, by dint of arduous discipline, is able to execute the most intricate *fantasias* or *impromptus* with the greatest ease, and yet with true fidelity of expression.

The artistic actor, who is received with plaudits wherever he appears, may have become so familiar with his rôle as to perform it almost unconsciously. The late John T. Raymond grew into the part of *Col. Sellers* so completely that he could enact it with but a slight sense of his own personality; Joseph Jefferson is accredited with the statement that to play *Rip Van Winkle* was as easy for him as eating his supper; and the elder Booth, it is said, frequently imagined while playing Richard III. that he really was that monarch.

and on several occasions was with difficulty prevented from slaying a *sixth* Richmond in real earnest!

It is through the *un*conscious memory, then, rather than the conscious, or deliberate, that the mind is enabled to attain its keenest perceptions—to reach the loftiest flights of fancy; through instinctive recollection are the most notable and enduring results achieved. For that it is essential that the mind be placed in sympathy with whatever is sought to be conceived and realized.

The grandest and most inspiring thoughts come unbidden; they are not brought forth by laborious and protracted effort; they flash up from Memory's suggestions, as from a pure and sparkling spring gushes forth the crystal tribute gathered drop by drop since long ago. As Ovid says: "*Est deus in nobis; agitante calescimus illo.*"*

The faculty of memory seems to have been bestowed by an all-wise Providence in advance of the reasoning powers, that a bounteous fund of knowledge and sensibility and thought might be garnered by the wise and provident, to be unceasingly replenished and augmented in the years to come, and out of whose abundant stores the teeming mind might build imperishable structures of exalted thought and lofty sentiment and gorgeous imagery, to adorn, in splendor and in majesty, the hills and valleys and the plains of Time.

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*"There is a god within us; when he moves we are inspired"

CHAPTER III.

MARVELS OF MEMORY.

"How are such an infinite number of things placed with such order in the memory, notwithstanding the tumult, marches and countermarches of the animal spirits."

JEREMY COLLIER.

To the average individual of the present day, educated by the hot-house methods with which our school system, as a whole, has gradually become permeated, and which do not tend to the best development of the memory powers, the accounts which history and tradition have handed down to us of marvelous feats of memory performed by noted men of the past must seem well-nigh incredible; and yet, an ample volume might be filled with well authenticated instances of remarkable memory achievements by distinguished men of both ancient and modern times.

While it is true that there are occasional instances of abnormal memory development along certain lines, among persons possessing a very inferior grade of mentality, yet, as a rule, the greatest memories are found to be those of the greatest men—the two superlatives

being uniformly correlative; and, so cardinal a faculty is that of memory, it may be safely said that there cannot be a great mind without a memory also great.

While history has furnished many instances of the remarkable powers of memory possessed by distinguished men, yet there are hundreds—yea, thousands—of cases in which men who have been prominent in the world of intellect have not been accredited by historians with being possessed of exceptional memories; and yet, good memories they must have had, in the very nature of things. One of the chief reasons why history has been silent regarding the memory-power of a vast majority of the world's celebrities undoubtedly is that their memories retained the *essence* of what had been received by them rather than the *letter*, and thus their cases did not furnish that direct iterative evidence of their memory capacity which history would be apt to note. The general statement that this or that person-age had a capacious memory would in itself have little significance as an historical fact; the strong quality of his memory would not impress our understanding unless details were given of specific performances, so that some comparison might be made with one's own abilities in similar lines.

The mind of a Dante, a Dryden, a Bèranger, or a Goethe might, having absorbed the choicest thoughts of all the ages, render them forth from that matrix, the plastic brain of genius, as renascent in assuming new and more entrancing forms of beauty, to be the wonder of all the ages yet to come; but, nevertheless, a Lipsius,

who could repeat the whole of Tacitus; a Leibnitz, who knew the Æneid by heart; or a Daguessereau, who could repeat a poem of considerable length after a single hearing, might leave a far stronger impress on history regarding his powers of memory.

And then, too, history may often fail to do justice to its men of genius. When, in the eyes of Hume, William III. is a tyrant, and in those of Macaulay possesses the virtues of a saint, what shall we say of the discriminating judgment of historians? And when Sir Walter Raleigh, who in attempting to write a history of the world, endeavors in vain to get the facts concerning a street brawl under his very window, how can it be expected that a complete and truthful record has been kept of the attainments of the men at whose genius we marvel?

Historians are only human, after all; they have their loves and hates, in common with the rest of humanity; and we may be sure that, in transmitting to posterity their versions of the annals of the past, they have, through passion or prejudice, or the lack of authentic information from those who were contemporary with the personages of whom they are writing, left unsaid many a word of well deserved praise or censure.

Still, in spite of all the omissions and transgressions of history, many conspicuous examples of memory achievement by distinguished men of the past have come down to us, and a brief mention of some of those instances may not be devoid of interest and instruction.

Mithridates, the great Pontic king, and relentless foe of the Romans, knew the names of all his soldiers. It is said that in his empire no less than twenty-two languages and dialects were spoken, and that he could converse with fluency in each of them.

According to Pliny, Charmides, the Greek, could recite the contents of every book in his library, which was by no means a small one.

Cæsar possessed the remarkable power of being able to dictate to half a dozen secretaries at the same time, in as many different languages. No detail of public business ever escaped his memory, and on a certain occasion, finding it necessary to recall a law-suit which had taken place twenty years before, he gave all the details of the case without hesitation. It is said that he could repeat from memory more than eight thousand lines of poetry.

Cleopatra, the peerless Egyptian queen, who succeeded in so completely captivating both Cæsar and Antony, was able to converse fluently in ten or eleven languages.

Crassus, who with Cæsar and Pompey formed the first Roman triumvirate, had frequent occasion, while prætor in Asia, to adjudicate cases; and it is said that he could understand the testimony and pronounce judgment in any language or dialect that happened to be spoken in his presence.

Hortensius, the great Roman orator, and rival of Cicero, had such a retentive memory that he could easily carry in his mind every point in an opponent's

argument, down to the minutest detail, even though the discussion might last for hours. On a certain occasion, having made a wager with one Sienna, he attended an auction sale lasting the whole day, at the close of which he was able to recall the name of every object sold, the price paid therefor, and the name of every purchaser, in their proper order. All this was accomplished without a single error, as was proved by the records of the clerk, who kept an account of all the transactions.

Seneca was able to repeat, after one hearing, two thousand proper names in their exact order, either forward or backward. It frequently happened that persons in his audiences, for the purpose of testing his memory, would each recite a verse to him, which, when all had finished, he would repeat *seriatim* and without hesitation; and not only this, but he would thereupon repeat the verses in reverse order.

In one of his works he gives quite a curious and amusing illustration of memory power:

A certain author had written a poem of considerable length, and, as was the custom of the time, read it in public, the assemblage being a very large one. On the reading being concluded, a man stood up in the audience and denounced the author as a plagiarist, claiming that he himself had written the poem, in proof of which he offered to recite it from beginning to end. The audience, with one voice, demanded that he should substantiate his claim, whereupon he recited the poem all the way through, without an error, and defied the author to do the same; which the latter, to his extreme

mortification, was unable to do, and the audience promptly decided that the man who had recited the poem from memory must be the true author. On the verdict being declared, however, the man frankly stated that he had really never heard the poem before, but had committed it to memory while the author was reading it. But, in spite of this admission, he received even greater honor for his wonderful memory than did the author for his talent in writing the poem.

Eusebius, the great ecclesiastical historian, is authority for the statement that had it not been for the tenacious memory of Esdras, the Hebrew Scriptures, which were burned by the Chaldeans, would have been irretrievably lost.

Charlemagne, the greatest military figure of the Middle Ages, could talk fluently in eight languages. He paid great attention to the study of every language spoken in his empire.

Avicenna, the renowned Moslem philosopher and physician, when barely ten years of age knew the Koran by heart, and much Arabic poetry besides.

The foregoing are a few of the examples of great memory power possessed among the ancients—instances which literature has preserved to us. That they are incomplete as to detail may well be regretted, as well as the fact that, in the cases of a large majority of the distinguished men of former ages, no specific mention is made of their powers of memory; and yet, from the records which we have, meager though they be in that regard, it is evident that the master minds

of far-off time, no less than is the case with those of the present day, must have possessed rare memory power.

Let us now turn to some of the notable examples of great memories of modern times, in the preservation of which instances history has fortunately been far more provident than in the cases of great men's memories in the ages of the past.

Scaliger, the younger, whose extraordinary memory and prodigious learning were the marvel of the age in which he lived, committed to memory the whole of the Iliad and Odyssey in three weeks. He could with ease repeat a hundred lines after a single reading.

"Rare" Ben Jonson said in his later years that he was able to repeat *verbatim* from memory all the works that he had ever written, as well as a number of books that he had read.

Sir Walter Scott frequently astonished his friends by exhibitions of his wonderful memory. Every now and then he would entertain them by reciting long poems, after having heard the same read only once—and that years before. On one occasion he repeated to a party of friends the whole of Campbell's "Pleasures of Hope," after reading the poem through twice.

Bulwer knew by heart all the Odes of Horace, as well as his other poems.

Pascal, the eminent French philosopher, knew the whole Bible by heart, and could repeat any verse or paragraph without hesitation, when called upon. It is said that, up to the time when his health began to

fail, he never forgot anything that he had ever read or thought.

Landor carried his library in his head; it was his custom to give away a book after reading it, his reason being that he could retain in his memory all of a book that was worth keeping, and that it was thus useless to burden himself with the care of it.

It was said of Gibbon that a book was of no further use to him after his mind had once absorbed its contents. His power of mental retention was marvelous, as was also that of Carlyle, each of them carrying a prodigious amount of historical and of other information in his memory.

Poule, Buffon and Byron knew their own works by heart. Bryant could repeat any of his poems from memory.

Izaak Walton tells us that Bishop Saunderson could repeat all the Odes of Horace, all of Tully's "Offices," and the greater portion of Juvenal and Perseus.

Cardinal Mezzofanti was, it is generally admitted, familiar with a greater number of languages and dialects than any other man who ever lived. Dr. Russell, his biographer, states that at the age of seventy-two the cardinal was at the height of his powers, and could speak thirty languages fluently and nine fairly well, besides nineteen more or less imperfectly, and that he could read eleven more. In addition to all those languages, he knew more than forty dialects, each so different from the parent tongue as to virtually constitute a different language; so that, altogether, accord-

ing to Dr. Russell, the cardinal was master of no less than one hundred and eleven languages and dialects, more than a score of which he had acquired in the last twenty years of his life. Mezzofanti declared that he never forgot a word which he had once learned.

Magliabechi, the celebrated Florentine librarian, possessed such a retentive memory that his head was called a "universal index." He knew the location of every book in the vast library of which he had charge, and was familiar with all the great libraries of the world. He was able to read in all ancient and modern languages that had a literature, and more than once stated he could repeat the titles of more than half a million books written in many languages on a great diversity of subjects.

Max Müller, the great German scholar, was sufficiently familiar with eighteen different languages to be able to speak or write at will in any one of them.

Elihu Burritt, the "learned blacksmith," knew, it is asserted by his friends, all the languages of Europe and most of the Asiatic tongues.

Cuvier, the greatest naturalist of his day, had a prodigious memory. Shortly before his death he wrote to a friend that he had the materials for three important works in his head, all arranged and ready to be written down. He could state the names of over five thousand animals, as could also Agassiz.

Dr. Asa Gray, the distinguished botanist of Harvard College, knew the names of eight thousand plants. It has been estimated that Victor Hugo used more than

eight thousand different words in his ordinary work as an author. Milton had a vocabulary of more than seventeen thousand words, and Shakespeare the extraordinary one of nearly twenty-five thousand.

Dr. Johnson was said to never forget anything that he had at any time seen, heard, or read.

Professor Cunningham, the Scottish theologian, could recite Virgil and Horace from beginning to end. George Borrow, the noted English linguist, while at St. Petersburg published a little book named "*Targum*," in which occurred translations by him in prose and poetry from no less than thirty languages.

Lord Bolingbroke, the distinguished English statesman, complained of the exceeding tenacity of his memory, and gave it as an excuse for limiting himself to reading only the best authors. It is stated by his friend Pope that he could write on any subject as well without his books as with them.

Niebuhr, the historian, at seven was a marvel of boyish erudition. In his youth he occupied a position in one of the government offices at Copenhagen, and on one occasion a book of accounts was burned which contained matters of great importance. Niebuhr, by an effort of his memory, restored the entire contents.

Bossuet, the distinguished French ecclesiastic, knew the whole Bible by heart, as well as all of Homer, Horace and Virgil—an accomplishment the story of which almost staggers belief!

Antoine La Motte, the famous French poet and dramatist, possessed a strength of memory which seems

almost incredible. On a certain occasion Voltaire, then a very young man, read to La Motte a tragedy which he had just completed. The reading was listened to throughout with the closest attention, and upon its conclusion La Motte said: "Your tragedy is most excellent, and I can safely venture to predict its success. One thing, however, annoys me; you have allowed yourself to plagiarize in the second scene of the fourth act." Voltaire, greatly chagrined at this accusation, defended himself as best he could, insisting that the play in its entirety was his own composition. "You will pardon me for calling your attention to the fact," said La Motte, "but I can assure you that I do not make the statement without being able to support it with proper proof; I will therefore recite this scene to you, which pleased me so much when I first read it that I committed it to memory and am confident that I have not forgotten a word of it." La Motte then repeated the whole scene without the slightest hesitation, and with great apparent animation. Voltaire was utterly overcome with amazement, and scarcely knew what to say. After enjoying the young author's discomfiture for some moments, La Motte said: "Do not be distressed, my young friend; no one but yourself is entitled to the credit of writing this scene, for it is as much yours as all the rest of the play; but it impressed me as being so noble and touching that I was unable to resist the pleasure of committing it to memory as you went along in your reading."

Edward Henry Palmer, the great English Orientalist, could speak every European language; was master of the Turkish, Persian, Arabic, and Hindustani tongues, and also the dialect of the gypsies, and even deceived natives as to his nationality. On one occasion, while at Paris, he happened to be conversing with a Zouave, or "Turco," a native Arab. After the colloquy had proceeded a little while, the Arab said, "Why do you wear these clothes?" Palmer replied, "Why, how should I dress?" "Dress like what you are!" was the indignant response; to which was added, "like a Muslim!"

Von der Gabelentz, the noted German linguist and ethnologist, was equally at home in Suabilis, Samoyeds, Hazaras, Aimaks, Dyaks, Dakotas, or Kiriris, and could translate from Chinese into Manchu, compile a grammar or correct the speech of the Fiji Islands, New Hebrides, Loyalty Islands or New Caledonia.

Sir William Jones, the distinguished linguist, was thoroughly familiar with thirteen languages, and was able to read in thirty others with comparative ease.

Thomas Fuller, the noted English divine and author, once undertook that, having walked from Temple Bar to the farther end of Cheapside, in London, he would repeat, after his return, the names on all the signs on both sides of the street, and give them in their order, first as seen going and then as seen returning. He accomplished the feat with absolute correctness. It is said that he could write a manuscript page by setting down the first word of each line, then the second, and

so on, until the page was completed, composing the matter as he so proceeded.

Prescott, the American historian, is said to have composed and finished his narratives in his mind before a single word of them was committed to paper. M. de Lacépède, a noted French writer on Natural History, possessed the same remarkable faculty—composing and correcting his works mentally before writing them down.

Jeremy Taylor wrote his "Liberty of Prophesying" without access to books. He could memorize his own sermons with the utmost ease. His ability in this respect was so phenomenal that some of his friends used to facetiously say of him that he began committing his sermon to memory on the ringing of the first bell for service!

Professor Lawson of England sometimes examined his classes in the Hebrew and the Greek Scriptures without once referring to a book. He declared to a friend on a certain occasion that if by any chance all the existing copies of the Bible should be destroyed, he could restore from memory all the text with the exception of a very few chapters. After a single perusal of a sermon he could repeat it *verbatim* from the pulpit.

A most remarkable story is told of a French novelist who in his earlier years had been a printer by trade. He possessed such a prodigious memory that he is said to have composed a novel and set it in type at the same time. If this account be reliable, it is probably

the only case on record in which a book was printed without being first prepared in manuscript.

Ignatius de Rossi, the noted Italian scholar, had a marvelous memory. He was once paying his colleague, Canon Lattanzi, a visit at his home in Tivoli, where the canon had also invited a few other friends. In the course of the conversation the subject of the wonderful mnemonical powers of Rossi came up, when the latter stated that if any one present would repeat a line from any one of the four great poets of Italy he would undertake to recite the one hundred lines immediately following. That Rossi could do this seemed incredible, but the test was made, and to the amazement of all the feat was accomplished with perfect success.

But of all the great memories of modern times that of Richard Porson was probably the most wonderful. He knew almost the whole of Homer, Horace, Cicero, Virgil and Livy; he could repeat whole plays from Shakespeare and complete books from "Paradise Lost," scenes from Foote, and scores of pages from Gibbon's "Decline and Fall," or Rapin's works. He knew by heart the whole of "Mortal Tale of the Dean of Badajos," and Edgeworth's "Essays on Irish Bulls," and could repeat from beginning to end Smollett's "Roderick Random" and other noted English novels. He could recite a newspaper page after one reading, and said that he would undertake to repeat the entire contents of a week's issues of the "London Morning Chronicle."

One of the most marvelous feats of recent times was performed in August, 1897, at Sondrio, capital of

the Valtellina district, in the northern part of Italy, by Signor Edoe, professor in the Institution di Lorenzo, who, on a wager, repeated from memory, and without making a single mistake, the whole of Dante's immortal poem, "Divina Commedia," which consists of nearly one hundred cantos, an amount of matter about equal to the number of words contained in the New Testament. The feat occupied about twenty-four hours in its accomplishment, lasting from 6 p. m. on one day until 2 p. m. the following day. It was achieved in the presence of a committee of associate professors and literary men, who, at about midnight, divided into two parties, alternately sleeping and listening until the recitation was finished, the text being carefully followed by prompters during the whole time, all in order that there might be no question as to the genuineness of the performance. This feat was accomplished after a preparation that was comparatively short, considering the great length of the poem, and is perhaps the most wonderful exhibition of verbal recollection in recent times, —which goes to show that, with all its defects, this commercial age of ours is able to, at least now and then, produce its masters of the great art of Memory.

Among the well authenticated instances of marvelous precocity in relation to the memory faculty, occurring in modern times, may be mentioned the following:

William Wotton, an English prodigy, born in 1666, could translate Greek and Latin readily at the age of five; and when eleven years of age perfectly understood, besides Latin and Greek, Hebrew, Arabic and

Syriac, as well as most of the modern languages. He was then familiar with history, both sacred and profane, and was well versed in divinity, law, mathematics, chronology and antiquities; in fact, he had acquired a universal education at the age of only eleven.

Bishop Thirlwall, the historian, was a prodigy of learning. He was able to read Latin when only three years old, and at the age of four read Greek with an ease that amazed all who heard him. When seven years of age he wrote an essay, "On the Uncertainty of Human Life," which was subsequently included in his "Primitiæ," or "First Fruits," published while the boy was in his twelfth year. The book contained nearly forty sermons, besides a number of essays and poems. Perhaps in the whole history of literature there is not another author whose first book was published before he was yet in his teens.

John Stuart Mill began studying Greek at three years of age, and before he was eight had devoured the works of Hume, Gibbon and Robertson, and also read the whole of Herodotus, Xenophon's "Anabasis," the "Cyropædia" and "Memoriabilia" of Socrates, besides parts of Lucian and Isocrates and six of the "Dialogues" of Plato.

Another case of wonderful precocity is that of John Philip Baratière, who was born in Anspach, Bavaria, on Jan. 10, 1721. His powers of memory were so marvelons that when only four years of age he could converse in French, German and Latin. At six he had mastered Greek, and at eight was familiar with He-

brew. When ten years old he translated from Hebrew into French the "Travels of Benjamin of Tudela," enriching the same with valuable annotations. In one winter, while yet a young boy, he read twenty large folios, with all the intelligence of a vast, comprehensive mind. At a very early age he produced a voluminous work of great excellence on Egyptian antiquities. He was also precociously proficient in mathematics. This wonder among prodigies died in his twentieth year.

But perhaps the greatest marvel of precocity in all ages was Christian Henry Heinecken, whose birth occurred at Lubeck, Germany, on Feb. 6, 1721, less than a month later than that of Baratière. At ten months of age he could talk, and when fourteen months old knew the histories in both the Old and New Testaments. In his thirtieth month he was familiar with geography, anatomy, and the history of the nations of antiquity, understood the use of maps, and knew five thousand Latin words. In his fourth year he had become conversant with ecclesiastical history and also the doctrines of divinity, with their proofs from the Bible. Further, he knew two hundred hymns and their tunes, and eighty psalms; fifteen hundred verses and sentences from the Latin classics; could repeat many chapters from the Bible; understood arithmetic, and was familiar with the history of Europe; and at the Court of Denmark he delivered twelve speeches without once faltering. He could, moreover, talk fluently in German, French, Low Dutch and Latin. His stupendous memory caught and retained every word that he read or

heard. This unexampled prodigy lived only until June 27, 1725, being less than four-and-a-half years old at the time of his death.

A few examples will now be given of extraordinary power in various lines of memory in the case of persons evincing a general intellectual capacity not more than mediocre, in some instances even insignificant in that general regard. Thomas Reid, Scottish philosopher and author of various works on mental science, tells of a London auctioneer who used to sell goods at auction all day, and when evening came would write down the denomination and price of every article sold, and with each the surname and initials of the purchaser.

Baillie relates a story of a waiter in a London restaurant, who, on a wager of a few pounds, memorized the entire contents, advertisements and all, of a daily paper of eight pages, accomplishing the feat in only four hours.

An Englishman named William Lyon, a strolling player, had a most astonishing memory. One evening, at Edinburgh, while passing a social evening with a party of friends, he made a wager of a bowl of punch that he could the next morning repeat from memory the contents, from beginning to end, of the "London Daily Advertiser." At the appointed time the test was made, and he accomplished the task without making a single error, the matter including all sorts of foreign and local news, from the important down to the trivial; the quotations of various railway and other stocks and

bonds, legal notices of every description, the current prices of all kinds of provisions, etc., and advertisements of every character imaginable.

Dr. Macklin, the noted actor and dramatist, tells a story of a man who called upon the Greffier Fagel, a Dutchman of note, for the purpose of exhibiting his wonderful powers of memory, offering to subject himself to any test that might be demanded. He was handed a newspaper which happened to be lying on the table, and requested to read it through and repeat the contents *verbatim*. He thereupon read the paper as desired, and, after doing so, repeated the entire contents without omitting a single word, to the exceeding amazement of Fagel, who could not find words adequate to express his admiration of the man's wonderful mnemonical power, upon which the latter said: "Oh! this is nothing; shall I repeat the same backward?" "That is impossible!" exclaimed Fagel. "I will prove to you that it is not, if you will have the patience to listen," replied the stranger, who accordingly proceeded without the slightest hesitation to demonstrate his ability to perform the feat, beginning at the end of the last column and ending with the title.

An English mnemonician once presented himself to Frederick the Great for the purpose of giving an exhibition of his powers. Shortly afterwards the Prussian king invited a friend, who was a poet of some note, to pay him a visit. The poet complied, and at an appointed time read to the king a poem of considerable length which he had just finished. The Englishman,

in the meantime, was in the room, and so situated that he could hear every word of the poem, but was entirely concealed from view. When the reading of the poem had been concluded, Frederick remarked that the poem could hardly be original, as there was a foreigner present who could repeat the poem from memory. Upon a sign from the king, the stranger made his appearance, and was asked if he had ever heard of such and such a poem (mentioning the composition just read). "Oh! yes," was the response; "I know the poem by heart." To the poet's amazement and chagrin he then recited from beginning to end the poem which the king's visitor had taken infinite pains in composing; whereupon, the mortified author, succumbing to a sudden fit of rage, immediately tore the manuscript into shreds. Upon being told of the circumstances under which the Englishman had become familiar with the poem, the poet's wrath became sufficiently appeased for him to be quite willing to do penance for his outburst of passion by rewriting the poem from a second recital of it by the stranger, who had no difficulty in going through with it as before.

In Friars Hill, West Virginia, there lives a man not far from forty years of age, named George W. McMillon. He seems to remember everything that he ever read or knew. He can give the name, birthday, date and hour of death, of every president of the United States not now living; the majority or plurality by which each was elected, and the minutest published details of all their lives. He can relate the particulars

of every visit he has made during his life; can give the names of all the persons he has met within two weeks previous, and what each person said. He can also quote chapter after chapter from the Bible, and recite poems of three thousand words in length without missing a single word.

The Toledo "Bee" recently told of a most extraordinary case of memory power, that of a man named Clark, residing in New York City. He can remember the number of votes cast by each of the chief political parties in each state of the United States at each of the last four national elections. He knows the number of square miles in every country in the world, and in every state in the Union. He can quote from Shakespeare for hours without making a mistake, and is able to recite the first four books of Homer's "Iliad" in the original Greek. He can learn any language in two weeks sufficiently well to read its literature with enjoyment. He is familiar with the writings of all the classic authors in English, Latin and Greek; which includes, in his case, that he can repeat page after page of the works of any of them, and that it would be difficult to give a quotation from any one of the classics which he could not promptly locate and quote the preceding and following passages. He is also more or less familiar with standard authors in French, German and Italian, and his researches have even extended into Chinese, Japanese, Arabic and Sanskrit. He can give every important date in history, and has also a considerable knowledge of the science of music.

Dr. Moffat, the distinguished African missionary, once preached a long sermon to a tribe of wild negroes, on the conclusion of which he sat down to rest himself Shortly afterwards he noticed a commotion a little distance away, quite a crowd having gathered about one negro, who was talking to them in an earnest, impassioned manner, his discourse being accompanied with frequent gestures of the arms and body. Curious to find out what the negro was saying that could so interest his hearers, Dr. Moffat approached closer, when, to his astonishment, he found that the native was preaching his, the reverend investigator's, own sermon over again, word for word, and even with the inflections and accompanying acts of gesticulation!

In the early part of the present century there was an old beggar living at Stirling, Scotland, who was called "Blind Alick." He knew the Bible by heart so thoroughly that if a sentence was read to him he could at once name the book, chapter and verse; or if the latter were first indicated he could quote the exact words. A man once tested the accuracy of his memory by repeating a verse, in doing which he purposely made one verbal error. Alick named the place in the Bible where the passage occurred, at the same time pointing out the error of the quotation. The man then asked him to repeat the ninetieth verse of the seventh chapter of Numbers. Without hesitation, Alick replied: "There is no such verse; the chapter has only eighty-nine verses."

In 1895 quite a sensation was caused in St. Petersburg by the advent there of an illiterate peasant woman, seventy years of age, from Olonetz, named Irma Andrejewna Fedosova, who, it is said, could repeat upwards of 19,000 folk-songs and poems, a rhythmic repertoire, comprising fairy stories, legends, romances of love, camp, and battle, and comic and tragic tales of every variety—an accumulation whose real magnitude can hardly be conceived by the ordinary mind. A noted Russian litterateur, having accidentally heard of this woman's wonderful powers, had brought her to the capital, and, with the assistance of an associate, he spent several weeks writing down her treasure of folk-lore, with a view to publishing it.

"The Popular Science Monthly" of January, 1880, tells of a lady possessing most wonderful memory powers, which were notably developed at a very early age. Her name was Dorothy Schlozer, and she was a native of Hanover. Before reaching her third year she had learned Low German, and within three years following had mastered French and German, other languages being soon afterwards learned, also with remarkable rapidity. She knew Latin and Greek before attaining her fourteenth year, and was in every respect a good classical scholar. She was proficient, also, in every branch of polite literature, and in many of the sciences.

The same periodical also records a most peculiar case of memory power in a youth named Hicks, who was employed in one of the railroad yards near Roches-

ter, N. Y. He could give the number of any one of nearly three hundred locomotives on simply hearing its bell ring. He was subjected to frequent tests, and was invariably correct. When we consider that the range of sounds possessed by engine-bells is very limited, probably not exceeding an octave, and that the variety of sounds which this youth must have thus been able to distinguish and carry in his memory exceeds two score for each tone, the performance almost surpasses belief!

By the foregoing striking examples of great memory attainments, and especially those regarding persons who have been eminent in literature or otherwise distinguished as historical characters, it seems to be amply demonstrated that high intellectual ability, either special or general, and superior memory-power go hand-in-hand; that while there have been notable instances in which the possession of abnormal memory development along certain narrow lines has been accomplished with mediocre, or even very inferior, general mental ability, yet that a high order of intellect and a broad retentive memory are inseparable; for mind is built upon memory—other foundation than that there cannot be. With that foundation deep and broad, so is the superstructure lofty in the sight of men and of large capacity; thus Nature, the great architect, builds mind. A tenacious memory, in a restricted sense, may exist at the expense of intellect; but where a great mind exists, a great memory must exist also. As a rule, the more powerful the intellect the more capacious must be

the memory; in which is meant, not that parrot-like memory which embodies the form rather than is inspired by the essence—which has affinity for cold, sterile facts rather than warm quickening ideas—which absorbs but seldom gives forth; not a merely automatic memory such as that, but the intelligent, efficient memory, which discards the trivial and unprofitable, retaining only the worthy and serviceable, and so assimilating the same as to make it a beneficial possession, to be transmuted, it may be, into pearls of thought far transcending in worth and beauty aught from which they were thus sublimed.

History has failed to tell us of any notable memory achievements by certain among the master-minds of the world; none such is recorded of Shakespeare, Cervantes, or Goethe—that crowned king! those mighty lords! of the intellectual spirit-land; a very unfortunate omission in their cases, it may seem, and yet their powers of memory could not have been other than phenomenal; but those powers were, it must be, of that comprehensive nature which absorbs ideas rather thar literal facts—the latter only as they have an essential bearing on the former—and which rejects the chaff, retaining nought except the golden grains of thought, whose destiny, with such genius, is to issue forth once more, as from richer soil, regenerate in new forms and instinct with a higher life which the master has breathed into them.

Thoughts originated by lesser intellects and absorbed by greater undergo in the alchemy of the mind

a metamorphosis, reappearing in a garb more rich and beauteous by far than that which they first assumed. Such ethereal chemistry may be termed the subliming-work of Genius; but behind it all—its foundation, its inspiration—there is, there must be, Memory in its grandest and its noblest form—the Memory of *Ideas*.

CHAPTER IV.

MNEMONICS, PAST AND PRESENT.

"By simple and mechanical methods one man shall do that in a month which shall cost another of equal ability whole years to execute."

DR. PRIESTLY.

"Marshal thy notions into a handsome method. One will carry twice more weight trussed and packed up in bundles than when it lies untoward, flapping and hanging about his shoulders. Things orderly fardled up under heads are most portable."

THOMAS FULLER.

"Use the most proper methods to retain the ideas you have acquired; for the mind is ready to let many of them slip, unless some pains be taken to fix them upon the memory."

ISAAC WATTS.

The necessity of employing artificial means to assist the memory in attaining its highest capabilities, or even of reaching a reasonable point of excellence, has been recognized by the most intelligent minds from the earliest times, and great men in all ages have not hesitated to admit their dependence on mnemonics as a means of storing away in their minds much useful knowledge that would otherwise have forever faded away.

Mnemonics, after all, is but another term for the art of systematic memorizing, and possesses properties which are of inestimable value to the seeker after knowledge, but which, unfortunately, receive far too little appreciation from the average individual. Of the multifarious impressions received by the mind from time to time, each one that is deemed worthy of being remembered may, by the aid of mnemonics, be deposited in its proper apartment of the memory, from whence it can be brought forth at will with but slight effort.

Mnemonics makes the most of what is given into memory's safe-keeping; preserves an orderly arrangement of memory's possessions, rendering them available on demand, and thus may be said to substitute in large degree certainty for chance.—

There seems to exist a comparatively widespread belief, created for the most part by a certain class of writers, that mnemonics interferes with the natural working of the memory—that so-called "natural memory" does not, and should not, employ devices of any kind to increase its efficiency. That idea, however prevalent though it may have become, and rightful as objection may be to many pseudo-aids falsely termed mnemonical, is essentially untrue. If genuine and properly applied, mnemonics, instead of inpeding the proper action of the memory, greatly facilitates its working along natural lines. Its chief point of excellence is that it prevents the memory from falling into slovenly habits, which it is almost certain to do unless rightly guided.

In the case of a well cultivated memory, its stores

are carefully assorted and properly labeled for ready reference. If the memory be an uncultivated one, it is liable to fail in responding on occasions of dire need, because its contents are so illy arranged that there is no certainty of their being available when wanted.

In the realm of mentality that only is *natural* which is guided by *intelligence*. All genuine knowledge is reciprocally complemental with reason; true mental growth is governed by laws which are immutable—they are thus natural, and these laws also include Memory, the very foundation of knowledge. To do anything in the most natural way is to do it in a manner which is based on sound principles, which are discerned by intelligence, and their verity confirmed by experience, —and on this basis it can hardly be called "natural" for the memory to be encouraged to passively receive whatever is poured into it, with the expectation that these impressions and ideas will somehow or other take care of themselves! The memory is *natural* only if understanding and judgment be employed in the storing away of whatever the mind apprehends, even though this task may not be performed in the most advantageous manner; whether or not it be done through the exercise of the reasoning powers is the touchstone by which we may determine if our memory be a *natural* one or not.

Most of us trust our memory as if it were possessed of almost illimitable power. We pour into it indiscriminately everything that our senses take cognizance of, and seem to expect that by some sort of intuition it

will contrive to preserve all those impressions, and in an orderly manner, and be ever prepared to deliver on demand whatever of its stores may be called for.

In the training of all our other faculties except the memory, however, it is deemed necessary to use *method;* unless method were employed, intellectual growth, in even a moderate degree, would be an impossibility; in every stage of a liberal education method is an all-important factor.

We grow in knowledge through a systematic course of study; we are able to take each successive step because the last step has strengthened and broadened the foundation of our intellectual being. We find it necessary to employ method in every phase of life in which progress is possible; but with an inconsistency as singular as it is inexcusable, we allow a vast proportion of the ideas and impressions taken in by our mind to run at large, as it were, blindly trusting that somehow, without intelligent effort on our part, they will distribute themselves with such perfect propriety as to be readily available at all times!

While there is, to a minor extent, an instinctive classification in the memorizing of knowledge which the mind receives, yet this is relatively limited in effect, as should naturally be the case with such work unless intelligently done; and the result when an immethodical manner of preserving impressions has been allowed to prevail is that our memory is not what may be termed reliable; that which has been intrusted to its custody it may yet, unanchored, have within reach, but unless

such matter is conveniently available it must generally be of little practical use to its possessor, and it cannot be rated as truly available unless put away in a systematic manner.

To so deposit Memory's archives that they may be brought forth at will, is an *art*, and this art, translated into a significant term, is mnemonics.

According to Pliny, Cicero, Quintilian, and other writers of antiquity, who both recommended and practiced mnemonics, its invention originated with Simonides, the famous Grecian poet of Ceos, who flourished about 500 B. C.

The circumstances under which he came to originate his system are said to have been as follows:

The victor in one of the series of Olympian games, inflated with vanity over his success, desired Simonides to compose a poem commemorating the event, to which the poet assented, for a stipulated price. In due time the poem was completed, the victor being extolled in the most flattering terms, according to contract, but in the poem Simonides happened to speak also in praise of Castor and Pollux, the gods of boxing and equestrian exercise in Grecian mythology. His patron, who considered that he had bargained for a poem devoted exclusively to laudation of his own exploits, thereupon took dire offense because of this alleged violation of the agreement, and refused to pay Simonides more than half the amount agreed upon, telling him to collect the other half from those who had shared his own glories in the poem. Shortly afterwards a banquet was given

in honor of the victorious contestant, to which Simonides was invited. Before the conclusion of the feast he was called out by a messenger, and had scarcely left the building when the ceiling fell in, burying the entertainer and all his guests in the débris; and when the relatives and friends of the victims came to identify and take away the remains for burial, they found the bodies so crushed and mutilated as to be impossible of recognition. It happened, however, that Simonides remembered the place which each guest had occupied at the banquet table, and by means of that the remains were identified.

It was upon this event that mnemonics is believed to have been founded. Simonides seems to have shortly afterwards invented a complete system of artificial memory based upon this tragic occurrence, and to have taught it with great success. His principles were subsequently introduced and developed at Rome by Metrodorus, the friend of Epicurus, and constituted the groundwork of all mnemonics for many centuries.

The essential features of that system, originated by Simonides, and which is commonly termed "the topical system," are as follows:

A building was pictured in the mind, divided and subdivided in a certain order; this order was thoroughly committed to memory, and each room represented by some animal, bird or other living creature, with which things or ideas to be remembered were arbitrarily associated.

Each of these "memory" apartments was capable of

containing fifty different objects or ideas, arranged as follows: Nine numbers occupied each of the four walls and the floor; the side opposite the entrance represented the units, the right hand side the tens, the left side the twenties, the rear wall the thirties, and the floor the forties, Nos. 10, 20, 30, and 40 being placed just above their respective walls, and 50 in the center of the roof. Other apartments were added and memorized from time to time, as required, the symbols for each room being left to the judgment or fancy of the memorist.

With the decline of civilization, which culminated in the destruction of the Roman empire, mnemonics disappeared entirely from view, and did not reappear until nearly the close of the Middle Ages.

In the latter part of the thirteenth century Roger Bacon, the learned English monk, wrote a treatise on the subject of Memory. It was never printed, but is preserved among the manuscripts at Oxford.

A few years later Raymond Lully, the noted Spanish missionary, wrote a work on mnemonics, which, owing to its complicated features, does not appear to have obtained a very wide circulation, either then or in after times, although its principles have been fully elucidated by later writers, especially of the fourteenth and fifteenth centuries, most of whom made alleged improvements on Lully's method.

Shortly after the invention of printing, Jacobus Publicius, a native of Florence, wrote several short articles on mnemonics, which were compiled into a volume containing fourteen leaves, or pages, and illustrated with

wood-cuts of a very crude character. The book was of little utility, however, the system which it advocated proving too cumbersome for practical use. Antiquarians believe this book to be the first one containing wood-cuts printed with movable types.

A score of years later Peter of Cologne published a system, based on Publicius' method, being, like the former, of the "topical" order. At about the same time Conrad Celtes, a German poet of some distinction, announced a system, also of the *topical* kind, but in which letters of the alphabet were substituted for the rooms or apartments used in previous systems.

A comparatively short time after the publication of Celtes' method, there appeared a teacher of mnemonics named Petrus de Ravenna, who traveled throughout Italy, giving public exhibitions, and being received everywhere with great enthusiasm. On one occasion, as a test of his powers, he played a game of chess and at the same time dictated two letters on subjects named by the audience, while another person present threw dice, and a fourth recorded the throws. On the game of chess being concluded, Ravenna repeated from memory all the moves, in their proper order, recited every word contained in the two letters, backwards, and told each throw of the dice, forward and backward. Ravenna continued to teach and give public exhibitions in Italy for many years, and was subsequently persuaded to visit Germany and France, where he likewise astonished his audiences by the wonderful feats of memory which he performed. He published a work

on mnemonics which passed through nine or ten editions.

In 1533 a work on Memory was issued by a Dutch writer named De Krypse. The *topical* method was used as a basis, several innovations being introduced and the whole profusely illustrated with curious wood-cuts.

In the latter part of the sixteenth century Thomas Watson, an English poet, published a treatise on mnemonics, based also on the *topical* system, but a capacious wall being used, instead of one or more rooms of a house, the wall being arbitrarily divided into a large number of spaces, each symbolizing a particular object, the various objects being classified in a designated manner. That which was to be memorized was associated with one or more of those objects, as under the old system.

In the beginning of the seventeenth century, Lambert Schenkel, a German mnemonician, who had cultivated his memory in certain branches to a remarkable degree, began giving public exhibitions of his powers, traveling from place to place through Germany, France and Belgium, and teaching his system, which was received with great favor wherever he went. Schenkel's feats consisted chiefly in repeating numbers and disconnected words which were given him by his audiences, and also reciting sentences both forward and backward. He could repeat three hundred arbitrarily-connected words, and more than two hundred sentences, all in the exact order in which he heard them. Schenkel had a remarkable career, being denounced from the

pulpits as a sorcerer and conjurer, and persecuted therefor,—at one time barely escaping the torture of the Inquisition on account of those accusations. He wrote a book on mnemonics, the publication of which he long found extreme difficulty in securing, but eventually the tide turned and Schenkel obtained from King Henry IV. the exclusive privilege of teaching mnemonics all over France, a penalty being imposed of 4,000 francs on any who should attempt to teach the art without his consent, one-third of which fines were to be turned over to Schenkel himself. He guarded the secret of his system very jealously, exacting an oath of secrecy from all his pupils; but the demands for instruction became so numerous that he was unable to attend to them all, and so he commissioned one of his pupils, named Martin Sommer, to teach the system, a certain portion of his earnings to be turned over to Schenkel. Sommer, however, broke the compact, and in 1619 published, in two pamphlets, the secrets of Schenkel's system, the which later writers have examined and pronounced simply an elaboration of the ancient *topical* system.

In 1618 one John Willis published a mnemonical system containing a number of novel and original features. He gave rules for memorizing the ordinary affairs of every-day life, then for words, phrases and sentences, and finally for long discourses—progressing by easy stages from one to the other; this was accomplished by means of brief memorandums made according to certain rules. Further on in his work he taught

how to memorize anything seen, heard or read, without recourse to notes; one of the means employed being to propose a series of twenty-two questions, which were to be applied to the subjects to be memorized. In another portion of his book he used the antiquated *topical* system as a basis, taking an imaginary house of two rooms, and placing therein symbolic objects, represented by colors, as follows: Black, white, blue, red, gold, silver, purple, yellow, green, cinnamon—ten in all.

In 1648 one Stanislaus Winckelmann issued a treatise on mnemonics, employing the pictorial system of the ancients for the usual purposes, but in addition he devised what is believed to be the first "figure alphabet" —a means of memorizing numerals by causing each of the digits to represent certain consonants, using the vowels in connection therewith to form words, which are to be memorized, thus preserving the figures in their proper order.

In view of the fact that nearly all of the memory systems which have been promulgated since Winckelmann's time have had the *figure* alphabet as their basis, a glance at the key which he used may not be amiss, and the same is here reproduced:

1	2	3	4	5	6	7	8	9	0
B	C	F	G	L	M	N	R	S	T
P	K	V							
W	Z								

Each figure is thus represented by one or more consonants, the vowels and the aspirate H being used in-

discriminately in connection with the consonants to form words or sentences; by the latter being memorized, a translation of the original number can be made whenever desired. Thus BiG RaT would denote 1480; PaLe WiNe, 1517; PaiNTS, 1709; BaRReL, 1885; PuRSeR, 1898—and so on.

In the latter half of the seventeenth century Leibnitz, the great German philosopher, also wrote on the subject of mnemonics, the chief portion of his treatise being devoted to an elucidation of his theories regarding the memorizing of numbers, and especially those of chronology. He made some improvement on Winckelmann's figure alphabet, but beyond that originated nothing of especial value.

In 1730 Dr. Richard Grey published a work entitled "Memoria Technica," designed chiefly to assist the memorizing of historical dates. This is the first known English work in which syllables are used to express figures. He invented a figure alphabet which was quite different from those of Winckelmann and Leibnitz, each of the numerals representing only one consonant. The following is Dr. Grey's key, either the upper or lower letter or combination being used at will:

a	e	i	o	u	au	oi	ei	ou	y
1	2	3	4	5	6	7	8	9	0
b	d	t	f	l	s	p	k	n	z

A word or phrase was constructed out of the date to be memorized, to which was prefixed the first syllable of the most conspicuous word denoting the event.

Thus, SHAKE *also* (the two words) would signify that Shakespeare was born in 1564; WASH*apie*, that Washington was born in 1732; ROB*apan*, that *Robinson Crusoe* was published in 1719; COL*bone*, that Columbus discovered America in 1492; PRINT *a fit*, that printing was invented in 1433—and so on. The number of dates which it is possible to construct by means of Dr. Grey's key is, however, very limited, as about half of the consonants are excluded, and, instead of the vowels being used *ad libitum*, as by Winckelmann's method, each vowel is restricted to represent only one numeral, which so limits the vocabulary that but a comparatively few dates can be indicated.

One of the most successful teachers of mnemonics during the past hundred years was Gregor von Feinaigle, a native of Baden, who, in 1807, visited Paris and there lectured and taught his system with great success. Thence he proceeded to various other cities in France, and afterwards to Germany, devoting his entire time to lecturing and teaching, and being most favorably received wherever he went. In 1811 he visited England, where his abilities were also promptly recognized, and where he taught his system extensively. Feinaigle, like Schenkel and others of his predecessors, made a great secret of his system, and exacted the most solemn pledges from his pupils not to reveal the same or any portion thereof, within a certain period, without first obtaining his express permission. One of his disciples, however, whom he had authorized to teach his method in certain parts of Germany, betrayed his master's con-

fidence, and, during the same year that Feinaigle appeared in England, published a voluminous work on the subject of mnemonics, extending to nearly five hundred pages, in which Feinaigle's system was divulged in all its details and also were set forth the essential features of the previous mnemonical systems of any material value. Feinaigle adopted a figure alphabet of his own for memorizing numbers, and used the *topical* method as a basis for recollecting facts and events. He applied his system to a wide range of subjects, among the principal of which were the teaching of history, of geography, and of languages—the memorizing of prose and poetry being also an important feature.

In 1823 M. Aimé Paris, a Frenchman, published a work on mnemonics, in which he discarded almost entirely the *topical* system, which had been used so generally in former times, and made an important improvement to Feinaigle's figure alphabet which greatly facilitated the forming of fitting words to represent numbers. A phrase or sentence was constructed embodying that which was to be memorized, the last word of which indicated the date. The chief portion of Paris' book was devoted to giving rules and illustrations for the memorizing of numbers, especially historical dates. Paris taught his system throughout France for many years, with great success.

In about 1840, Major Beniowski, a Pole, who had been a student of Aimé Paris, located in London and began teaching mnemonics, and within the next couple of years published two small pamphlets on the subject.

He claimed to have made certain important discoveries in the phenomena of memory, and probably originated the ideas from which were subsequently developed the "intermediate" or "correlation" theory, used by various teachers of mnemonics.

In 1843 Carl Otto, a Danish mnemonician, traveled in Germany, teaching his art, and published in the same year a treatise on mnemonics. His method was a simplification of that of Aime Paris, but did not diverge materially from the general plan adopted by that mnemonician.

In 1845 Francis Fauvel Gouraud, of the University of France, published in New York and London a work on mnemonics, which received wide attention at the time. The system was based largely on that of Aimé Paris, but claimed many original features. It was too cumbersome, however, to be of practical benefit, and, although extensively advertised, failed to secure popular recognition.

In the same year an American named Pliny Miles published a system based on that of Aimé Paris, but introducing certain features that were entirely new. He originated the idea of memorizing difficult or unknown words by using well known words or phrases whose sounds correspond very nearly with those of the words to be memorized. Thus, the battle of Marengo would be suggested by "Marry and go;" Manitoba, by "Man at a bar;" Borodino, by "Borrow a dinner;" Saskatchewan, by "Sis catch a swan;" Reconnoitre, by "Reach an oyster!" etc. The chief feature, however,

that Miles originated was the substitution of what he termed "nomenclature tables" for the *topical* method. He arranged a series of words from 1 to 100, each word representing a particular number. This list was to be thoroughly committed to memory, so that the mention of a word would instantly suggest its corresponding number, and facts or dates could be associated with those words as desired. Miles applied his principles to a list of historical personages, giving their ages and dates of death; also to quite a number of other subjects requiring the use of figures.

Dr. Hermann Kothe, a German teacher of mnemonics, published, in 1848, an able work on Memory, and was the first mnemonician who is known to have developed the system afterwards copied and elaborated by Pick, Loisette, and others, of connecting words of dissimilar import by means of intermediates, or "correlations;" thus the words "chimney" and "leaf" would be connected as follows: "Chimney—smoke—wood—tree—leaf." "Pillow" and "ink" would be connected thus: "Pillow—feather—quill—pen—ink."

William Stokes, a celebrated English mnemonician, published in London, in 1865, a book on Memory, which has had a remarkably successful sale. It is based largely on the system of Miles. He has also published numerous other books and pamphlets, designed as aids to the memory.

At about the same time Dr. Edward Pick published in London an interesting and valuable work on mnemonics, in which he went exhaustively into the prin-

ciples of Memory, as interpreted by him, insisting, among other things, that no more than two ideas should be considered by the mind at the same time. His system was based on that of Carl Otto's, whose pupil he had once been, and he also elaborated Dr. Kothe's theory of using intermediates to connect dissimilar words.

Lyon Williams, in 1866, George Crowther, in 1870, and F. Appleby, Charles Hartley, and J. M. Granville, in 1880, published works on Memory, all possessing meritorious features; and during about the same time John Sambrook of England elaborated Gouraud's method of memorizing figures by using words the sounds of whose vowels corresponded with those in the numerals, with the exception that the long sound of "I" was appropriated to "five" and the short sound of that letter given to "nine." Mr. Sambrook noticed that, with these exceptions, the numerals from 1 to 10 each had a different sound, and with this fact as a basis he constructed a mnemonical system of great originality. The following will illustrate his method of applying well known words to the sounds of the various numerals: Gun, tooth, tree, floor, hive, stick, sexton, gate, tin.

In 1882 A. E. Middleton published, in London, a little book of some merit as a compilation, at least, entitled "Memory Aids, and How to Use Them;" and in 1885 another interesting book, entitled "All About Mnemonics," which was revised and enlarged in 1888, under the title "Memory Systems." The latter book gives a list of the various mnemonical systems of any note

that have appeared since 1325, and gives a mnemonical table of 100 words, with which to associate facts in history; it also includes hints for retaining geographical facts, cultivating musical memory, committing prose and poetry, learning languages, lecturing and reporting without notes, and performing various mnemonical feats.

In about 1884, Ambrose Loisette, an American teacher of mnemonics, visited London, and there began teaching his system. In 1886 he located in New York, and soon afterwards began teaching, charging a good, liberal fee for the course of lessons and requiring each student to sign a bond for $500 that he would not disclose the system or any part of it. Loisette's method is based on the Kothe system of using "intermediates" to link together disconnected words, and he copies the figure alphabet of Miles almost exactly, to translate numbers into words. He also gives rules for almost all other sorts of memorizing. His book is called "Physiological Memory, or the Instantaneous Art of Never Forgetting," and is divided into six parts, *N*os. I. and II. being termed "Recollective Analysis," No. III. "Recollective Synthesis," No. IV. "Predicating Correlation," No. V. "Instantaneous Gordian Knot," No. VI. "Certainty of Never Forgetting."

In the same year (1886) appeared a book by M. L. Holbrook, entitled "How to Strengthen the Memory," which makes no pretensions to being a memory system, but contains much useful advice to memory students.

Prof. Asa S. Boyd, of Baltimore, a teacher of mne-

monics, published also in 1886, a book entitled "Modern Mnemotechny," the same being an elaboration of Pliny Miles' system of translating figures into words.

The year 1888 saw several books on Memory published. The principal ones were: "Natural Method of Memorizing and Memory Training," by Prof. W. W. White, of New Haven, Conn.; "Memory and Its Doctors," by Dr. Edward Pick, and "Memory; What It Is, and How to Improve It," by David Kay. The latter is not what might be termed a "system," in a technical sense, but is comprehensive, and written with marked ability.

In the same year, John A. Shedd, of New York, published a Memory system, called "The Education of the Memory." His method of memorizing numbers is to construct a phrase or sentence, the number of letters in each word corresponding with the figure to be memorized. Thus, Rome was burned by Nero in the year 64: that fact would be indicated by the phrase, *Burned Rome.* In 1544 occurred the birth of Tasso: the recalling of that date and the event which it commemorates would be accomplished by memorizing the sentence, *A great poet born.* To recollect the date when the great historian, Gibbon, was born (1737), it is only necessary to keep in mind the following: *A history was written.* 1769 signifies the birth of Napoleon: that would be recalled by the sentence, *A strange, mighty conqueror.* And if we imagine Napoleon to have afterwards used the expression, "*A Waterloo I found,*" we would thereby be reminded of 1815, and what it meant! *A renowned*

man died, would indicate the year of Lafayette's death (1834); as would *A literary genius risen* suggest the year of Kipling's birth (1865). The main feature of Shedd's system is the memorizing of historical dates in that way. In 1890 Shedd published a pamphlet entitled "How to Remember," which contains some features of interest, but does not pretend to elucidate any additional system.

In 1890-91 James P. Downs, of New York, published a series of six pamphlets on Memory, containing much that is original and useful. These pamphlets bear the following titles:

I. The Mastery of Memorizing;
II. Quickness of Perception;
III. Eye and Ear Memory;
IV. The Study of Languages;
V. Memory and Thought;
VI. Memory Training of the Young.

In 1893 a book on mnemonics, entitled "Memoranda Mnemonica," by James Copner, was published in London. In this book historical facts, numbers and miscellaneous information are symbolized by doggerel rhymes, the system being similar in this respect to that taught by Stokes.

The foregoing is a condensed narration of such facts in the history of mnemonics as the writer has deemed worthy of mention, covering from the time of Simonides, twenty-four centuries ago, down to the present day, and giving especial attention to the period that has elapsed since the revival of learning. In such nar-

ration, the names of all writers on mnemonics have been given whom the writer believes to have contributed original, suggestive, or interesting features to the study of the science.

Hundreds of treatises of little or no value have been written on that, as on other sciences, whose authors' names even can scarcely be discovered, though search be made through all the nooks and crannies of bibliography. Such writings it would have been superfluous to mention, as well as others, of some slight literary merit, perhaps, but whose alleged mnemonic methods have either contained too little originality or been too complex to be of utility.

And with all the copious writing on mnemonics that has been indulged in during the past half dozen centuries, what work can be pointed out as standard authority on the subject? What psychologist, what devotee of Mnemosyne can establish a well grounded claim that he has discovered the veritable secret of how to train the memory so that it may attain its highest powers consistent with being an efficient aid to the best development of the mind?

Nearly two generations ago Isaac Pitman invented Phonography, and published a book expounding the principles which he had established. To-day his system is probably in more general use than all others combined; no one has yet seemed able to devise a method which is its acknowledged superior.

Musical counterpoint had reached as high a state of development a century and a half ago as it has ever

attained since that time; and the sublime symphonies of Beethoven, the incomparable fugues of Bach, and the inspiring oratorios of Handel, have never been eclipsed by succeeding generations, and stand to-day as master-pieces of genius, and are likely to occupy that proud position through all future time.

Euclid, sometimes called the "Father of Mathematics," wrote his "Elements of Geometry" more than twenty centuries ago; his geometrical demonstrations are still used in our best institutions of learning to a far greater extent than those of any other mathematician.

But what can be said of the writers on mnemonics? Who ever hears, now-a-days, of those mnemonicians so celebrated in their day, as Ravenna, Schenkel and Winckelmann? What has become of the once lauded Memory systems of Feinaigle and Aimé Paris? And who would think of poring over the ponderous volume of Gouraud (even if one could readily find a copy!) in order to learn how best to cultivate the memory? Why is it that out of the hundreds of treatises on mnemonics that have appeared in the past, not one (with the exception of a few of the comparatively recent works) may be said to have survived?

Can it be that the true principles of mnemonics had never been discovered? that after all the years, and the decades, and the centuries of thought which had been devoted to investigating the processes of the memory, and originating and elaborating theories regarding the proper method for its development, the real key-note had not been sounded, and no rational plan devised for

educating the memory to its best capabilities—not to be the master, but the servant, of the mind? Can it be that the hypotheses advanced by mnemonical teachers of the past have been built on too insecure a foundation, and the machinery employed in their application too complex and cumbersome to render the systems of practical benefit? Let us investigate:

Although the *topical* system, so extensively used in olden times, is now practically obsolete (and very properly so), yet during the age in which it prevailed that system was no doubt the most feasible one that could well have been devised. In those days there were not the multifarious demands upon the memory that exist at the present time. The known world was condensed into a comparatively narrow compass, so that all geographical knowledge then possible of attainment was extremely limited. Science, properly speaking, had not been born. There was no geology nor botany, no zoölogy nor ornithology; it was astrology instead of astronomy, and alchemy instead of chemistry. It was an age of superstition; mythology dominated over all else in its influence on the feelings and actions of men.

Human history, in the knowledge of the ancients, had scarce begun; and as chronology had not then been established upon a uniform basis, the memorizing of historical dates was not of sufficient importance to require serious consideration in mnemonics—and therefore a feature which occupies such a prominent place in modern systems was then of but small consideration.

Education was thus confined to but a few branches,

and the most advanced thought of the age was absorbed mainly in philosophy, oratory, lyric poetry, drama and the arts—war being regarded as the greatest of all the arts, with perhaps architecture second, and painting third.

As men of learning in that age were comparatively few in number, the art of printing yet undiscovered, and the material used for writing purposes extremely costly, it is evident that books could be produced only with great labor and at considerable expense. The ownership of a book was considered by its proprietor as equivalent to the possession of at least a small fortune, and the volume was guarded as jealously as the miser hugs his secret hoard. Therefore, such knowledge as was published through the medium of books was disseminated almost entirely by means of oral transmission—its retention by the hearer being secured through conversations about it, and one or more repetitions of the matter usually.

The chief things, then, which the people of those days found it necessary or desirable to retain in the memory were whatever of interest or value there might be in books which was within their scope of comprehension, together with what might develop from time to time in the incidental affairs of life—for the preservation of which a pictorial system of mnemonics was undoubtedly the best suited, its adoption being greatly encouraged by the peculiar suggestiveness of the mythological teachings of the age.

Let us now pass over the many centuries which, to almost the time of our own generation, intervened since Rome was in the midst of her material and intellectual glories, and during which vast period mnemonics made but little divergence (except crude forms of the *figure* alphabet) from the main features of the ancient system, and let us proceed to investigate, in a brief way, some of the theories advanced in mnemonical systems of the present age.

The most significant improvement which followed the primitive *topical* system, so infeasible and cumbrous in the present age, was the invention of the *figure alphabet*, now much improved, which was designed for the translation of figures into words, and is used chiefly for the memorizing of historical dates. That alphabet, as now constructed, is so vast an improvement over the undeveloped forms in which it formerly existed as to render comparison almost an absurdity. At first there seemed an entire lack of method in the arrangement of the alphabet; now, there is *a reason* why each letter used is made to represent some particular numeral; there is some peculiarity of resemblance in either form or sound that greatly assists the retention of the alphabet in the memory—thus facilitating the translation of figures into words, and *vice versa*.

The alphabet here given is, with some modifications, the same as that used half a century ago; it is as follows:

0	1	2	3	4
c (soft)	l	n	m	r
s				
z				

5	6	7	8	9
f	b	t	g (soft)	c (hard)
v	p	th	j	g (hard)
		d	ch	k
			sh	q
				ng

The theory on which the figure alphabet is thus arranged is as follows:

0 is represented by *c* (soft), *s* and *z*. The letter *c* is the first letter of "cipher;" *z* is the first letter of "zero;" *s* has the same sound as *c* (soft), and all three are cognates; that is, they are formed by the same organs of speech, without a change in the position thereof. 1 is represented by *l*, which it closely resembles in appearance; 2 by *n*, which has two stems, or downward strokes; and 3 by *m*, which has three stems. 4 is indicated by *r*, which is the last letter of the word "four," in several languages. *l*, *m*, *n*, and *r* can also be thought of as the liquids, representing the first four numerals. 5 is represented by *f* and *v*, which are cognates, and both of which letters are in the word "five," being the only consonants therein; *v* is also the Roman numeral. 6 is indicated by *b*, which resembles it in appearance; and its cognate *p* is a *b* inverted. 7 looks somewhat like a capital *T*, written; *t* is also the last letter of "seven," in French (*sept*), and *d* is a cognate of *t*; and

to these is added *th*. 8 is resembled by g more closely than by any other letter; *j* has the same sound as *g* (soft), and to these *ch* and *sh* are added, whose sounds do not materially differ from the others. A written 9 and a *q* look almost alike; *k* and *c* (hard) are cognates of *q*, and *g* (hard) more nearly resembles *k* in sound than it does any other letter. A digraph, *ng*, is also added, to be used as a syllabic terminal only; in other cases those letters count as two figures; thus, in "morni*ng*" it would be 9; in "a*ng*el" it would be 28; in "a*ng*le" it would be 29.

It will be noticed that the numerals are represented only by consonants, the vowels (in which are included *w* and *y*, as also *h*, except in the digraphs indicated), having no value as numerals, but being used at will, in connection with the consonants, to form words. X is omitted from the list entirely, as it is used so infrequently and is really a combination of two consonants, —*k* and *s*; it has, too, when at the beginning of a word, a different sound—that of *z*; it can be used, therefore, only to represent the number 90 (*ks*). The only case in which *h* acts to alter the value of a consonant is when used as a part of *ch* or *sh*.

The following rules are to be observed:

1. In the translation of words into figures it is the *phonetic* value only that is considered; the *sound* governs, instead of the *spelling;* thus, "laugh" would be 15; "phrase" would be 540; "trophy" would be 745.

2. Silent letters have no value; thus "*ph*t*h*isic" would be 709; "*p*neumatic" would be 2379; "plou*gh*" would be 61.

3. Doubled or repeated consonants count as only one figure: "rill," for instance, being 41, instead of 411; "muff," 35 and not 355; "Llama," 13 instead of 113.

4. Either *c* (soft) *s* or *z*, when it is the first letter of a word or sentence denoting a number, is disregarded in integral numbers, the prefixed cipher being useless; thus, "century" would be 274; "siren" would be 42; "zebra" would be 64. In all cases, however, it counts as 0: thus, "select sermon" would be 1970432; "zealous citizen" would be 100702.

5. S, when added to a word, to form the possessive case, has no value; thus "John's hand" would be 8227; "bird's nests" would be 6472070.

The following will illustrate the translation of figures into words:

0:	Ice.	5:	Foe.
1:	Ale.	6:	Bee.
2:	Inn.	7:	Tea.
3:	Home.	8:	Jew.
4:	War.	9:	Key.

The vital objection to the *figure alphabet* as a medium by which numbers with the facts or events to which they relate may be memorized, is that there is so seldom any reciprocal suggestiveness between that to which a number may be intended to refer and the word or sentence into which the number may be translated; and, unless there is some direct relation or contrast, some similarity or oppositeness of appearance or quality—in short, some association not too obscure, by which the remembrance of one will be pretty apt

to recall to mind the other—the method cannot but be of little utility, even though there has been not a little ingenuity displayed in its construction. And that this vital defect exists may be amply demonstrated by a few illustrations: for instance, Marius, the great Roman general, was born in 155 B. C. Out of these figures about the best that can be done is to form the phrase "Leave-off;" what relation that phrase bears to the distinguished Roman it is difficult to perceive!

Again: The year 562 B. C. represents the occasion of comedy being first exhibited—and it was also the year in which Anacreon was born. "Fabian" seems to be the only word that can be constructed out of the date mentioned—and again we seek in vain for some suggestive comparison.

King Canute was born in 995. "Gay calf" can be constructed out of the figures forming that date, but the relation between that animal and the Danish conqueror is not easy to determine.

In 653 the Colossus of Rhodes is reputed to have been destroyed. "Befoam" is the only word that can be tortured out of those particular figures!

Here we have a few more illustrations:

The Franciscan Order was founded in 1209. Eliminating the "1" when the date is above 1000, and we have 209, out of which we are able to construct the word "nosegay." Paracelsus was born in 1493; the only mnemotechnic word is "Requiem." Benjamin Franklin's birth occurred in 1706; "Disobey" is the

best we can do with that date. We are able to form only the word "Damage" out of 1738, the year of Herschel's birth, and only the word "Defame" out of 1753, the year in which the British Museum was founded. The Moscow University was founded in 1755; "Wood-fife" is the key word to that event! The battle of Jena was fought in 1806: that date must be indicated by "Joyous boy," and "Shelf" must be relied upon to remind us of Waterloo and 1815! Victoria was crowned Queen of England in 1837; the word "Ashamed" can hardly be supposed to readily remind us of that event. Alexandria was founded in 332 B. C.; "Mammon" is the only word that can be formed from that number.

Many other illustrations of a similar character might easily be given, but the above will suffice to clearly show how impracticable the *figure alphabet* is as an aid to the memorizing of historical dates; and as the number of figures is increased, so is the difficulty augmented of constructing words and sentences to correspond with them. In the case of some numbers the vocabulary is but a brief one, and even then the words are in large proportion such as are far from familiar to the average individual.

After all, but one sensible conclusion can well be arrived at concerning the *figure alphabet* as a medium for memorizing dates—or indeed numbers having any significance whatever; it is admittedly ingenious, but it is of small efficiency in practice—and the wonder is that such a considerable number of mnemonicians

have been so wofully deceived by its allurements. At first its plan seems a very fascinating theory—but when the attempt is made to put it into practice, the machinery is soon found to be seriously defective, and the method is finally abandoned in despair.

If an historical date could be easily and certainly translated into a word or phrase which would be in some way suggestive of the event to be memorized, it would be a most wonderful discovery, and constitute an enduring principle of mnemonics which could not but be of incalculable value to all true votaries of the mnemonical art. But, unfortunately for the cause of mnemonics, it so happens that the date of an historical occurrence can rarely be translated into a word or expression which has any sort of legitimate relation to the event which is to be memorized; and, even if an association between the two ideas could be formed, there is little doubt that the effort involved in the construction of words out of letters in the *figure alphabet*, and associating the same in some way with the event to be memorized, would uniformly be much more arduous than that required to memorize the date by pure force of will—the association itself, in a large majority of cases, being, of necessity, purely arbitrary and artificial.

If an historical event could usually be satisfactorily indicated by a *common*, instead of a *proper*, noun, it might then be possible generally to construct, out of the letters in the *figure alphabet* representing the date of the event, an adjective or verb, or both, which would

indicate some suggestive quality or action of the noun denoting the occurrence; but most historical events are best indicated by *proper*, instead of common, nouns. The name of the place where a famous battle took place, that of the victorious commander, is what must generally be relied upon to impress the event upon the memory; and any other historical event is also best recalled in a similar manner. There are, of course, exceptions to this rule, but they are comparatively few.

A proper noun cannot be in most instances distinguishably qualified; nor can there usually be attributed to it with reference to a particular event any suggestive action—and thus ordinarily no natural mnemonical association can be formed between the proper noun and any other part of speech; and if the association be not a natural one, it cannot well be permanent in the memory.

It thus becomes evident that the *figure alphabet*, as ven a moderately reliable expedient for the memorizing of historical dates, is practically without merit; the process is too cumbersome, is too uncertain in application, and, as is sufficiently demonstrated by what we have herein said, it is not based on intrinsic mnemonical principles; and all such being the case the conclusion is necessarily involved that the system is a hindrance rather than a help.

The method of memorizing an historical date by constructing a sentence, each word of which shall contain the requisite number of letters to unite with the

other words in forming the date, and then mentally associating this sentence with the event, is even more impractical than the *figure alphabet* plan. In the first place, as each word, by that plan, represents but one figure, no less than three words, instead of one or two, are required to form a sentence in the case of a large majority of historical dates. Unless at least one of those words is made to represent an action or quality, a sentence cannot be constructed; and the word or words is very liable to have one or more synonyms, not one of them probably containing the same number of letters as the word selected. On attempting to recall this sentence at some time in the future there is no certainty that some one of those synonyms would not come into the mind instead of the word originally chosen, and thus a serious error would be made in the date. Thus, the phrase, "A grand, luminous star," might be originally chosen to indicate the year of Massinger's and Selden's births (1584). On trying to recall the phrase at some future time, the word "clear," or "bright," or "radiant," or "brilliant"—each containing a different number of letters—might be thought of, instead of "luminous;" as might also, instead of "grand," some longer or shorter synonym thereof, thus bringing the event into even a wrong century!

In the next place, as there are comparatively few cases in which the form of a sentence cannot be altered so that the order of the words will be different, how natural it would be in trying to recollect a date once memorized to sometimes reproduce the words of a

sentence in a different order from that formerly employed—especially if the sentence as reconstructed happens to be the more grammatical of the two.

Then, too, comes the further difficulty of memorizing parts of speech other than common nouns—for the latter, representing better than those others ideas readily apprehensible, are the most easily retained in the memory.

Another difficulty which must be frequently experienced, is that of constructing sentences sufficiently suggestive of their corresponding events that on any sentence being recalled the mind will readily associate the same with the event which it represents. This difficulty may be appreciated by reference to a few illustrations taken at random. Thus, "Dramas in ink" indicates the year when Shakespeare's works were first published (1623); "Combats seven cycles," means the year when the Seven Years War began (1756); "Nelson's brilliant exploits," is made to represent 1798, when was fought the battle of the Nile; the battle of Balaklava, fought in 1854, is recalled by the sentence, "Cavalry's fatal ride;" "General insults general," is supposed to bring to memory the fact that Burgoyne's surrender at Saratoga occurred in 1777; "Lightning no flint-lock," that friction matches were invented in 1829; and "Distinct distant voices," that the telephone was invented in 1876!

Add to the foregoing objections the difficulty heretofore noticed, of associating in the mind the proper noun denoting the historical event with any other

part of speech, and you have a system that is not only demonstrated to be impracticable, but absolutely ridiculous.

And now as to the theory of connecting dissimilar words by the use of (so-called) "correlations" or "intermediates." It is claimed by the advocates of that theory that any two or more words, no matter how diverse in meaning they may chance to be—or, in fact, whether singly they possess any meaning at all—may be connected by easy and natural steps, so that the recurrence to the memory of any one of the original words, or any one of these steps or "correlations," will cause to be renewed to the recollection all of the remaining words, thus assuring the revival in the memory of the original word desired.

This feat is accomplished by adopting any one of the following methods for forming "correlations" which may seem the most suitable in each particular case:

First—By Analogy; which would include words of similar meaning or possessing similar qualities, or which have properties bearing some relation to each other; also words resembling each other in sound, but different in meaning.

Second—By Antithesis; which would include words of opposite meaning or possessing contrary properties.

Third—By Coincidence; which includes words neither similar in sound, nor of either similar or opposite meaning, but which the mind has instinctively associated, one with the other, even though there may be no direct relation betwen the two.

The "correlation" theory seems extremely plausible when first presented in all its glowing colors to the average mind, and it is often only after a protracted test thereof that the memory student becomes resigned to relinquish the alluring idea that he is one of the fortunate ones who was destined to develop a phenomenal memory by the instrumentality of that system—a plan he had ardently welcomed as a most wonderful mnemonical discovery. Such a disappointment, however, is as inevitable as it is logical, and a verdict of condemnation must invariably follow a fair trial in the case of any theory which is as sophistical as it is fascinating.

It is indeed true that any word may be connected, after a fashion, with any other word, by means of so-called "correlations"—but what a lavish expense of time and mental drudgery is frequently necessary in order to accomplish the task!

The process is a slow and painful one, at best; and its utter artificiality, instead of stimulating, cannot but tend to, in some degree, weaken the natural powers of the mind, if long persisted in.

The very assumption that any two words may be connected by a chain of intermediate words, implies the necessity of conceding the utmost latitude in their selection, in order that the desired result may be brought about. Two words may easily be so vastly dissimilar in sound or meaning, or both, that they cannot be connected except in a fashion that reaches the utmost degree of incongruity. This is particularly

the case with proper nouns, which, as they usually possess no verbal meaning in themselves, cannot be "correlated" except by employing words to which few of them bear any appreciable natural relation, except it may be the accidental one of sound—which, of course, includes such words as may be brought into requisition through the transgression of punning, frequently in its most aggravated form. To be able, therefore, to form "correlations" with reasonable certainty and dispatch it is requisite that a person be not only well educated and a rapid thinker, but also expert at punning—a talent whose cultivation can hardly be considered worthy of encouragement at the expense of other mental faculties. And, after a person shall have succeeded in linking two words together by means of "correlations," is there any assurance that he will be able to retain in his memory with any sort of permanency the various links in the chain, as well as the hundreds of other "correlations" that he must have, or already had, occasion to invent in endeavoring to make a practical use of the system? In pursuing the system he must, of necessity, use some words or their synonyms more than once; and so what certainty is there that he will know where each one belongs when he desires to revive the various links in a particular chain?

And, assuming that all of those incidental obstacles could, by great labor, be overcome, of what secondary practical use is the connection of dissimilar words? What especial end is subserved, either in the

affairs of every-day life, or in connection with the tasks and pleasures of the mind and memory? Is the real direct gain equivalent to a tithe of the time and labor involved? Can there be a benefit sufficient to compensate for the forcing of the thoughts into unnatural channels, obviously antagonistic to the best development of the intellectual faculties, as tending to a habit of disjointed whimsical thinking?

The fact is, as experience has abundantly shown, that the time and labor employed in inventing "correlations" and committing them to memory is vastly greater than that required for arbitrarily memorizing the desired word or idea, supplemented by occasional repetition (which latter would be necessary in the other case, also).

The whole "correlation" theory, which at first may seem so plausible and fascinating, requires only a brief trial to cause its permanent rejection; it does not, and cannot, accomplish with certainty the desired object, and it employs means that are unnatural and not practical, for accomplishing that which can be done effectively and durably only by a process based on true mnemonical principles. It is a vain delusion, hugged at first with glowing enthusiasm, it may be, as a long-hoped-for discovery in mental science, but destined to be ultimately discarded by all as a most arrant imposition, deserving not the dignity to be considered as forming the basis of a true mnemonical system, but only to be treated as illustrative of what ingenuity and perseverance may accomplish in word-

juggling—which art, it must be admitted, is delineated by the "correlation" theory in the most artistic and thorough manner. But "the game is not worth the candle;" the theory not worth the student's "midnight oil." As a matter of fact, for reasons already stated, comparatively few historical dates, at the most, can be reliably impressed upon the memory through the employment of any of the methods which have been described. It is only by accident, now and then, that a properly constructed phrase or sentence can be translated from the material furnished so as to be significant of a particular historical event and embody the corresponding date. Diligent experiment will show that in the case of a vast majority of historical dates there can be no significant allusion so made thereto—and unless that can be done, how can the dates be reliably memorized by those methods?—and yet devices such as have been indicated are proposed in all seriousness as *systems* by which any historical date may be memorized! That they are entirely impracticable as methods for this purpose only a brief trial will suffice to amply demonstrate—and when we come to consider that the memorizing of historical dates is, after all, only a single feature of memory culture, it becomes evident that that which constitutes but a single *branch* of the mnemonical art cannot be properly considered a *system*—for a system worthy the name should include applicability to every important class of information desired to be recollected. Up to the present time such a system has not been produced; there is no single work

that has covered the whole field of memory culture—and indeed which has not been silent regarding some of its most important branches.

It is a curious fact that nearly every memory system of note has made the matter of historical dates its chief feature—memory development in other directions receiving comparatively little attention. While it is important that the ability should be acquired of memorizing historical dates with facility and certainty, yet that is only one of the subjects which memory culture should embrace. As there are various lines of mental activity, so are there various departments of memory, each worthy of cultivation according to individual needs, and each resting upon its own peculiar foundation.

CHAPTER V.

ATTENTION.

"Memory, the daughter of Attention, is the teeming mother of wisdom." TUPPER.

"The great art of Memory is Attention." BEATTIE.

"Attention is the stuff that Memory is made of, and Memory is accumulated genius." LOWELL.

"In the power of fixing the attention lies the most precious of the intellectual habits." ROBERT HALL.

"When the ideas that offer themselves are taken notice of, and, as it were, registered in the memory, it is *attention*." LOCKE.

"The permanence of the impression which anything leaves on the memory is proportionate to the degree of attention which was originally given to it." DUGALD STEWART.

As Mind is erected upon the groundwork of Memory, so the great foundation stone of Memory is Attention.

Attention, in its common signification, may be defined as the contemplation by the mind of any particular thing, action, or idea, to the exclusion of all else.

While this definition implies the exercise of the mental faculties in a more than ordinary measure, yet there are various degrees of vigor and intelligence with which the mind may seize upon anything presented for its consideration—and it is the degrees possessed of the characteristic power referred to of excluding self-consciousness and concentrating the mental energies upon any particular object, that in large measure distinguish one person's intellectual capacity from that of another.

It can hardly be gainsaid that the man who possesses the power of complete mental absorption—of with fixed attention holding the object of contemplation, however intricate its composition or profound its depth, before the mind until its innermost meaning is fully grasped, has within him the real germ of genius; genius whose proper development may be attained through a judicious expenditure and husbanding of energies and strength which need not be more than ordinary—provided always that there be a favorable environment. And we may be sure that he who possesses that power but partially must occupy a lesser position in the world of intellect—which may be no higher than that of mediocrity, and perhaps may be that of inferiority to average mankind.

But while intentness of contemplation is most surely essential to insure the retention in the memory of any image or idea which is presented to the intelligence, yet brief exercise of that faculty will not always suffice; if the subject be one of complex character,

there must also exist the power to devote sufficient continuity of thought to its examination that its full import may be distinctly engraved upon the mind—and only through that power also in most cases will the knowledge become an abiding possession of the memory.

It is that ability to concentrate the attention upon a subject of thought until its deepest signification is fully understood, which is the essential element of the mental superiority by which one person achieves success, while another who does not possess that power meets with unhappy failure; for in the case of the former not only is there a clear apprehension of what is before the mind for consideration, but there are also unconsciously called forth such impressions on the same subject as have been imprinted on the memory at various times in the past, and with them such ideas as they may have suggested—all of which, roused quickly like a feudal organization, combine to furnish material for bringing most favorably into exercise the creative forces of the mind; while in the other case (that of the slackened bowstring and consequently of the weak, wavering arrow-flight which misses the mark of success), there being only a superficial understanding of the subject and but an imperfect recollection of what has at previous times been only lightly impressed upon the memory in the same connection, intellectual advancement is hedged about by most serious obstacles, even though the mind be one of the first order otherwise than in the respect indicated.

Attention, when cultivated in a sufficient degree, merges into Concentration, or the ability to focus the whole mind upon any subject with which it may undertake to become familiar. It is the possession of this power that enables the trained stenographer to correctly report a speech, despite the distracting influences by which he is most commonly surrounded; or through which the musical conductor is able to listen, for the time being, to any one of the various instruments in his orchestra which he desires, excluding all other sounds from his perception, and shifting his attention from one instrument to another at will.

Many instances are on record of soldiers being wounded in battle who were wholly unaware of the fact until after the excitement of the conflict had subsided—their attention having been so completely engrossed in the struggle as to render them oblivious to all physical sensation.

Some of the most noted actors have been known to become so thoroughly absorbed in thrilling portions of favorite scenes, that they actually believed themselves to be the very characters they were impersonating. In illustration of this remarkable power, there may be mentioned a well-attested instance of a certain actor who had a chronic lameness, which caused him not a little inconvenience, to say nothing of the suffering that he was occasionally compelled to undergo during the more acute stages of his affliction. While before the footlights, however, the scenes in which he was taking part seemed so real to him that he became

totally oblivious to his physical defect and was able to move about the stage with apparently as much ease as his fellow actors.

It is related that Socrates, in one of the campaigns in which he was engaged, became, while on the march, so deeply engrossed in a line of philosophical inquiry which greatly interested him, that he began walking more and more slowly, until, finally he stopped, the army meanwhile passing him and at last leaving him standing in the highway alone, absorbed in his thoughts and completely lost to all sense of his person or surroundings. A courier was subsequently sent back to ascertain what had become of the great philosopher, who was found standing in the same spot, gazing intently on the ground and so profoundly absorbed in reflection that he was with difficulty aroused from his abstraction, and he then could hardly be made to realize that the army was more than a score of miles in advance, and that he had gone without food and sleep for a day and a night.

Inventors often become so thoroughly engrossed by their investigations that the hours glide by almost unperceived. Edison has been known to attain such complete absorption in an experiment that he would remain occupied for twenty-four hours at a time, wholly unaware that more than a brief period had elapsed.

It is this capacity for acute and prolonged attention that enabled a Champollion to penetrate the secret of the hieroglyphic inscriptions on the monuments of

ancient Egypt, and restore to the world a long perished language through the meagre clue of the Rosetta stone; that enabled an Agassiz to unfold the wonderful story of Earth's vicissitudes, as told by the rocks, and an Audubon to familiarize himself with the whole world of ornithology; that made it possible for a Euler, sitting alone in his prison cell, to mentally solve the most abstruse mathematical problems, or a Humboldt to penetrate the profoundest depths of cosmic evidences. It is through possessing this power of intense and continued attention and application that a Cuvier is able to hold within his mental grasp the whole history of the fossil world, and the colossal mind of a Shakespeare to fathom the ocean of man's past thought and experience and gather from its profound depths the choicest gems that ever were inclosed within the magic setting of language, to grace the precious diadem of literature.

"Genius is nothing but prolonged attention," says Helvetius.

While that definition may be lacking in completeness, yet surely it cannot but be admitted that Attention is the *seed* of Genius. The tree cannot grow except there first be the germ; without Attention there cannot be Memory, and without Memory Knowledge cannot develop—much less can there come into existence that rare and wonderful faculty which we call Genius.

As Attention is so highly essential to the development of a good memory, it thus follows as a logical

deduction that a defective memory is mainly due to the *lack* of attention.

The verity of that deduction is especially manifest in the case of the first presentation of an idea to the senses. As a general rule the first impression of anything is the most enduring in the memory, and naturally, for at that time most usually the curiosity is more deeply aroused than on any occasion afterwards —and curiosity begets animation; the impression made at that time, therefore, is apt to be much more vivid than when the idea presented to the mind has lost, in a sense, its newness, or novelty.

It may indeed be set down as a general rule that the distinctness and permanence with which an idea or fact is retained in the memory is in direct proportion to the vividness of the first impression.

Each succeeding time that an object of thought is contemplated by the mind, the impression produced thereon is naturally less strong than the preceding one—except, perchance, in cases wherein some special emotion is excited or where by the intervention of the will an added measure of attention may be *compelled*, which of course is not spontaneous. A vivid first impression is therefore essential to best secure the retention of anything in the memory, and the strictest attention is necessary for the creation of a vivid first impression.

Attention properly cultivated eventually becomes a habit, and having once reached a fair degree of development, it then operates in great measure instinct-

ively, or unconsciously, just as any other habit—and thus that kind of task which may at first have been achieved only by severe and protracted effort will ultimately be accomplished with ease and dispatch, and with a greater degree of excellence; for then when the mind becomes engaged in the contemplation of any subject, substantially no effort will be required to cause every other subject to be excluded from the mental vision, as the mind will do that of itself, without spurring and well-nigh spontaneously, and do it expeditiously also.

Attention, then, is the most important of all requisites in the development of memory, and no effort should be spared to strengthen and improve it. Nothing that is worthy of attention at all should be contemplated carelessly, or examined except with thoroughness, for what is fully comprehended is not easily forgotten, and that which is but imperfectly understood soon fades away from the memory; and, moreover, seeing or hearing in a careless or superficial manner only engenders and fosters a habit of inattention, which is the very bane of memory.

The whole energies of the mind should always be concentrated on the subject under consideration, which should not be abandoned until its details shall have been fully mastered, however unimportant many of them may seem—for any one of them may prove to be an arch-stone on which the stability of the whole structure depends. "One thing at a time, and that done well," is not less applicable to the cultivation of

memory than to any other of the most important practical affairs of life—for what is once properly considered by the mind thus becomes a permanent, instead of a merely transitory, possession: it is better by far to know a few things well than a great many things but imperfectly: it is of infinite importance that the foundation should be the enduring rock rather than the shifting sands: the building up of knowledge should surely rather be upon the firm, solid, reliable basis of Attention and Thoroughness, than upon the yielding, unsteady, vacillant elements of Inattention and Sciolism; for in the one case it means a noble edifice, a treasury of talent and genius—in the other a weak, clumsily wrought fabric, a storehouse of the odds and ends of mediocrity or inferiority. Which should be chosen? Like Reuben, shall it be said unto thee: "Unstable as water, thou shalt not excel?" "But," it may be asked, "how can the attention be surely secured and maintained if there be a lack of curiosity regarding the subject presented to the mind?"

The answer is—by the exercise of the *Will*. While curiosity [other emotions and feelings, too] may properly be considered among the most powerful of all the incentives for directing and preserving the attention, yet it is unadvisable to rely upon mere curiosity as an expected tool by means of which those things may be infallibly impressed upon the memory which are the most worthy of preservation.

The natural trend of curiosity is too apt to be in the line of the more trivial and ephemeral matters of

life—the things which may attract the passing fancy of to-day, but to-morrow prove of little or no true significance, scarce worthy to have ever occupied a place, however temporary, in the consciousness, much less to be deliberately treasured in the memory. Bad habits are, unfortunately, far more easily formed than good ones; it seems as if the former are instinctive, and that the latter cannot attain a better than flaccid quality except by assiduous culture.

Dryden has well said:

"Ill habits gather by unseen degrees;
As brooks make rivers, rivers run to seas."

The memory, as well as any other department of man's being, may acquire deleterious habits; if the school-boy were left to follow at will his own impulses, his memory would seldom develop in the direction best adapted to his moral and intellectual well-being and progress. His thoughts must be watchfully guided until childhood shall have merged into youth and youth into manhood, when he is supposably qualified to intelligently assume the direction of his own thoughts through the years of the future. But, even then, it cannot reasonably be expected that his mental powers will be developed to a degree even approximating their possibilities, otherwise than by the application of self-discipline—and this cannot be effectually inaugurated and preserved save through the exercise of the Will. Every rational being should possess a deep seated determination to make the most of his intellectual faculties—and the first and most essential step in this direction is to cultivate the memory. If that be done

only upon correct principles, the development of the mind moves with speed and is certain of accomplishment; and as Attention is more important than all other requisites in the cultivation of the memory, so the intelligent exercise of the Will is the most vital factor in the securing of Attention. By an effort of the will an interest which may not at first naturally exist, can actually be *created;* properly directed will-power can compensate for the lack of native enthusiasm in a subject, until eventually that interest which was once more or less forced, will have become in a great degree spontaneous; things which were formerly to us prosaic in the highest degree, distasteful even, will grow to possess positive attractiveness.

It is earnestly urged that there be an intelligent discrimination as to what the memory shall be encouraged to retain; let the chaff be cast aside, that there may remain only the golden grain; let each subject selected for consideration by the mind be regarded attentively until thoroughly mastered, before the next is taken up; and let the same rule be applied to each part of the same subject.

Let the student proceed step by step in that way, with Attention as the motto of his march and the rallying-cry of his mental forces, and the time will surely come when what was at first a task will have become a genuine pleasure—when what may once have seemed impossible of achievement will be accomplished with ease; and finally, when the development of the Memory and the Mind in an intelligent and systematic manner will have brought its bountiful and deserved reward.

CHAPTER VI.

ASSOCIATION.

"Next to the effect of Attention is the remarkable influence produced upon memory by Association." DR. ABERCROMBIE.

"It is by means of Association that we recall to mind past ideas and sensations." KAY.

"The more relations or likenesses that we find or can establish between objects, the more easily will the view of one lead us to recollect the rest." BEATTIE.

"Lulled in the countless chambers of the brain,
Our thoughts are linked by many a hidden chain;
Awake but one—and lo! what myriads rise!
Each stamps its image as the other flies."

ROGERS. (*Pleasures of Memory.*)

Next in importance to Attention as an essential factor in the development of Memory, comes Association. By Association is meant that peculiar property possessed by the mind of linking an impression received by it with some other impression already in the memory, so that by the recollection of either the other also is apt to be recalled.

While we must employ Attention to fix anything in the memory, it is necessarily through Association that we are able to revive it. Who does not appreciate the inestimable value of Association as a means of bringing back to mental view faces and forms and events of the misty past, which in no other way could have been restored to our remembrance?

The sight of a tree, a hedge, or a brook may cause the renewal within us of a world of tender memories! A hill, a bridge, or a field coming into view for the first time in many years, will often revive clearly in our minds and touchingly to our hearts scenes that to previons efforts of the memory had long since departed from our recollection. An autograph or a picture will bring back distinctly to our mental vision features and forms almost forgotten, it had seemed. A flower between the leaves of a book, when gazed upon in the after years of life, may touch as with spirit-hand what we thought was a vanished chord, and cause a thrill once more of that rapture which was felt on the occasion when the flower was first plucked—perchance in some sweet May-day of our youth. The notes of some familiar song of childhood's days, when heard again for the first time after the lapse of many years, will revive in our remembrance the faces and the voices of the departed dear ones who sang that song in the long ago.

Indeed, is there any one whose heart has not often beat quick with the sweet, and yet pensive, memories revived through the magic power of Association?—and who that is imbued with the spirit of true appreciation

would willingly exchange those memories for aught that the insubstantial riches of this world can purchase? Surely, no merely earthly pleasures, however enticing, are fit to be compared with the profound and enduring, celestial, Joys of Memory.

Association is indeed a necessary and one of the most potent means by which impressions of the past may be preserved in the memory. It may be likened to a chain, which may consist of many links, each one being an essential part of the whole, and the connection between the various links being both natural and powerful.

In illustration of the remarkable power of reviving past impressions possessed by Association, an amusing anecdote is related of a certain physician, of somewhat eccentric disposition, who, accompanied by his servant, was driving several miles in the country to visit a patient. On arriving at a certain point, he branched off from the highway onto an abandoned road, overgrown with brushwood, but which soon emerged into the main road.

After driving a short distance on this disused road he stopped, and turning suddenly to his servant, said: "Do you like oysters?" The servant was somewhat surprised at being asked such an odd question, but promptly answered, "Yes, sir."

The doctor said nothing more and the journey was resumed. About a year afterwards the two happened to be again journeying on the same road, and the doctor diverged into the deserted road as before. Stopping

at the same point as he had previously done, the doctor turned abruptly to his servant, as on the former occasion, and said: "How do you like them best?" "Fried, sir," was the ready reply!

That was a most suggestive example of the remarkable power of Association; although a whole year had passed by since the first question was put by the doctor to his servant, yet, when the same spot was reached again and a question asked that, by itself, was obscure and could not be intelligently answered, the servant, whose thoughts were now so full of his master's former inquiry, at once instinctively associated the two questions and was able to give a prompt answer.

It is a peculiar psychological fact that an isolated idea (if such there can be, in a complete sense) cannot remain in the memory; it must at once become associated with some other idea or impression, or it will forever vanish. Every idea that we have is associated with one or more other ideas, and it is only by following back the lines of association that an impression can be reproduced; and it is self evident that the more impressions there are associated with the thing to be remembered, the more ready and certain is its recollection. It is as if there were several paths converging into one: it is only necessary to find any one of those paths to be on the way to reach the desired goal; and the more paths, the greater the chance of some one of them being discerned. The reason why memory itself is possible lies in the fact that ideas suggest ideas: if it were possible (a conception which has been well-

doubted) for an idea to obtain entrance into the mind without connection with any other idea (instinctive or acquired), it could not be reproduced—a truth which is verified by the uniform observation of us all as to the correlation of ideas in our own minds. For anything to become fixed in the memory it must be linked to something already in the brain: hence the greater our stock of knowledge the easier for it to be augmented.

Any impression made on the mind is always accompanied with some other impression of more or less distinctness, and between which and the dominant impression there may or may not be a natural association; the circumstances surrounding the entrance of an impression into the mind may be such that the accompanying impression is entirely foreign to the main one, but yet it will often adequately serve to revive the dominant impression.

It is always better that the association should be a natural rather than an accidental one; but sometimes the least congruous associations are crowded into the mind by some peculiar recondite agency, and become the means by which some of the most important impressions made on the mental powers are reproduced—and they may often prove none the less serviceable in spite of their total incongruity.

Association may be divided with tolerable exactness into three general classes: Incidental, Natural, and Artificial.

Incidental Association is where there is a connection in the memory between things seen or events which

occurred at the same time or place, without reference to their relation to or dependence upon each other. The following anecdote will serve to illustrate this form of Association:

Some years ago a gentleman who was traveling on one of our western railroads was requested by a lady sitting near him to hold her birdcage for a few moments, while she would make some changes in her toilet. He complied, but had scarcely taken the cage from her hand when the train plunged down an embankment, some of the passengers being severely hurt, and all not a little shocked by the sudden disaster. The gentleman was fortunate enough to escape injury, but ever afterward the sight of a birdcage was sufficient to remind him of the accident, in all its painful details.

Here is another illustration:

The author was once passing the evening at a theatre where the opera of "Pinafore" was the attraction. During a certain scene, when the lights were partially turned down, a bat came in through some open window and began flying vigorously about the house, to the exceeding discomfiture of many of those present, who knew not the cause of the general commotion which took place, and to the consequent amusement of others. Ever since that time the sight of a bat, and even the thought of one, has rarely failed to bring most vividly to mind the circumstances of that evening, and especially that scene in the opera in which the bat took an unbidden part—although two ideas more disconnected than those could not well be imagined.

Taking an imaginary journey along the paths and by-ways of history and pursuing the same line of illustration, why might not the sight of a cherry-tree instinctively call up before the mind's eye the immortal hero of Valley Forge and of Yorktown?—or that of an egg bring to us in quaint attire the intrepid discoverer of America? An apple might easily suggest the illustrions Newton or the traditional William Tell, and a spider's web remind one of the heroic Bruce or the zealous Mahomet. Some companion's mentioning an asp would of course conjure up in our thoughts the peerless Egyptian queen whose charms fascinated the mighty Cæsar and enthralled the eloquent Antony; and, by a proper expansion of the imagination, a bale of cotton before our eyes or mental vision might put us in mind of "Old Hickory" and the battle of New Orleans; and the sight of a goose might carry us in imagination back to ancient Rome and its traditional delivery from destruction!

While it often happens that most powerful and permanent impressions are made on the memory by Incidental Association, yet its exercise should be encouraged as little as possible, for that which it causes the memory to retain is essentially of a miscellaneous character, impossible of methodical arrangement, and the process by which it is received into the consciousness is not of that nature which is calculated to properly develop the memory powers. Incidental Association is purely automatic in its action, being usually brought into exercise under wholly abnormal conditions, and is

thus to a considerable extent beyond the control of the will.

Natural Association is the perception of a genuine and apparent relationship between something which has already been apprehended by the mind, and something else which has just been introduced to it. It is the recognition of either a similarity, relevancy or contrast, or else ideal or scenic contiguity, subsisting legitimately and not obscurely between two or more things, events, facts or ideas. For instance, when an idea presents itself to the mind, the latter instinctively classifies it, as it were, or deposits it with previous ideas of the same class or character, if the same exist; and the greater the number of ideas thus stored away, the stronger the probability is that any one of them can be reproduced when desired. Thus, a fact ascertained in some particular department of Natural History will, by a process of natural selection, associate itself with other facts of a like nature previously known. The same is true in regard to historical events, and incidents in the lives of noted men—and, in fact, most probably with reference to everything in the realms of either sensibility or thought. A person, we will say, in reading about whales, learns that this denizen of the sea has a larger brain than any other living creature. On some other occasion he learns that the canary bird has a larger brain, in proportion to its size, than any other bird or any beast; that fact naturally associates itself with the other. Later on he ascertains that the largest human brain was that of Tourguenieff, the

novelist, which weighed nearly half as much again as the average brain—the next larger being that of Cuvier, the great naturalist, whose brain was one-tenth smaller than Tourguenieff's. At another time he learns that some of our most distinguished men have had undersized brains—among whom were Dickens, Byron and Lamb—and this leads the student to reflect whether, after all, it is not the *quality*, rather than the *size*, of the brain that determines intellectual power. All those facts, having entered the mind, will, by reason of their obvious affinity, naturally cluster together, and the recollection of one is likely to revive the others in the memory, one by one.

While perusing a newspaper we happen to come across an item that somebody or other has recently died at a very advanced age. That instance naturally reminds us of others of a similar nature which we have read of at various times, and, among them, may possibly call to our remembrance the cases of Democritus, the Greek philosopher, and Hippocrates, "The father of Medicine," each of whom lived to the rare old age of 103—and also remind us of the curious fact that both of those personages were born in the same year (B. C. 460), their deaths occurring in B. C. 357. That recollection, in turn, may recall to us the fact of the remarkable longevity of the Countess of Desmond, who was known to Sir Walter Raleigh, and who, Bacon tells us, cut three sets of teeth, and reached the great age of 140: of Thomas Parr, a farm laborer of Shropshire, England, who attained the extraordinary age of

152—and then did not die of old age!—of Henry Jenkins, who was called as a witness in an English court, and testified regarding events of which he had been an eye-witness a hundred and fifty years before, and who died at 169; and also of Peter Czartan, a Hungarian peasant, who transcended the more modern records in longevity by reaching the prodigious age of 185—having been born in 1524, and dying in 1709—thus having lived in three different centuries!

The subject of human longevity is also likely to call up in our minds that of longevity in the animal kingdom, and some of the curious facts in regard thereto. We remember, for instance, that the extraordinary age of three hundred years is sometimes attained by the elephant, while the rhinoceros is permitted to barely reach twenty—and we marvel that such is the fact—and that the bear's life is comprised within a score of years, while that of the camel may stretch out to an hundred. We wonder why the swan lives to be an hundred years of age and the crane only one-fourth as many; why the crow often rivals the swan in longevity, while the blackbird's span of life must be embraced within a baker's dozen of years—and why the limit of the wren's life is only three years, while the lark may live the length of a wren's life half a dozen times over. We are puzzled to understand why the tortoise's life may linger out to an hundred years, and the squirrel's span be barely seven or eight—and why it is that the pike and carp reach the extraordinary age of a hundred and fifty years, while the eel can live but

a brief ten. Naturalists may indeed explain to us that duration of life is based on the period required to attain maturity—but we cannot help wondering at it all, just the same, and by the learning of each additional fact do other facts of a similar nature previously learned, naturally become revived in the memory through the power of association.

The subject of longevity in the animal kingdom and in the human family, may very easily suggest that of long reigns of various potentates in the world's history. The unusually long reign of Queen Victoria, who ascended the throne of England in 1837, naturally suggests the query as to whether her reign has ever been surpassed in length by that of any other sovereign. On looking over the pages of our memory we find imprinted thereon the fact that George III. of England was king during the remarkably long period of sixty years: that Louis XIV. of France reigned sixty-one years; and also that Egypt's greatest king, Rameses II., exceeded even the extraordinary records already mentioned—having occupied the throne of the Pharaohs during no less a period than sixty-seven years!

Let the student notice what a natural line of association is the following: We will assume, for the purpose of illustration, that it is midsummer, and on a day when all seems the reverse of heavenly except the mercury, which is near the 100 degree mark.

It would at such a time be perfectly natural for the subject of hot weather to be uppermost in the mind, and for the query to arise as to where is the hottest

place on the earth's surface. On reflecting for a few moments we perhaps recollect to have sometime read that on the southwest coast of Persia, in the region bordering on the Persian Gulf, the mercury often reaches 128°, Fahrenheit, as it does also in the interior of Australia; and that in the vicinity of Massowah, on the Abyssinian coast of the Red Sea, a temperature of 133° is frequently attained, the mercury having at times been known to reach the almost incredible height of 160°!

The subject of excessive heat might easily suggest its opposite, and in a corner of our memory we find the fact preserved that the greatest degree of natural cold ever experienced, as determined by authentic measurement, was at Verkhoyansk, Siberia, where the thermometer has been known to register a temperature of 85° below zero; and that we once also learned that the greatest daily range occurs in certain parts of Arizona, where there is frequently a change of 80° in twelve hours.

In natural sequence it then occurs to us that on another occasion we read that the dryest place in the world is probably between the first and second cataracts of the Nile—where rain has never been known to fall. That information is well associated in the mind with the fact that the place of greatest annual rainfall is at Cherra Poonjee, in Assam, where it reaches the enormous average of 610 inches—the depth during one year having made the extreme record of 905 inches! The latter figures are better appreciated when we re-

flect that the average annual rainfall of the world is but 36 inches!

The subject of rainfall may easily suggest the subject of rivers, and we find no difficulty in recollecting that the Amazon is the largest, and the Missouri the longest (4,100 miles); and we are perhaps likely to remember also that the Desaguadero River, in Bolivia, is the most elevated, being 13,000 feet above sea level.

The subject of rivers naturally suggests that of lakes, and we perhaps remember that the most elevated lake, except the lakes of the Himalayas, is Lake Titicaca, Bolivia, 12,600 feet above the level of the sea; the highest body of salt water being Great Salt Lake, Utah, 4,200 feet above sea-level; the largest fresh-water lake being Lake Superior, and the deepest, Lake Baikal, Siberia, which latter is in some places 4,500 feet deep—two-thirds of which is below sea level; the largest inland sea being the Caspian. In this connection we may also chance to remember that the lowest body of water is the Dead Sea, 1,300 feet below the surface of the ocean; and that Lake Urumiah, Persia, is the saltest body of water in the world, the same containing twenty-two per cent of salt, while ordinary sea-water contains but three.

The subject of lakes and seas may suggest that of tides, and our memory may again tell us that the lowest tides are at Panama, where they average only about two feet, while in the Bay of Fundy the tides have been known to reach the enormous height of from fifty to sixty feet.

The subject of tides might easily suggest that of waterfalls, and we perhaps remember that the highest waterfall is in the Yosemite Valley, and is 2,550 feet high.

Does not the above chain of thought illustrate natural lines of Association?—and would not those facts, even if learned at odd times, naturally cluster together?

The foregoing examples are given to illustrate the retentive power of the memory through Natural Association—the various impressions which are received from time to time linking themselves, one by one, with previous impressions, until perhaps a long concatenation of facts and ideas is acquired by the memory, the recollection of any one of which naturally causes the others to be successively revived and with comparative ease—thought's electric current being readily conducted, or spontaneously progressing along the chain.

Impressions thus received and stored away are associated together by what may be termed Similarity, or Resemblance—that is, not being necessarily all immediately related in thought or presented to the mind consecutively, but possessing features to a certain extent genealogically allied, a genealogy of many branches.

With Similarity as an associating force, might also be included its antonym, Contrariety—for, although things are usually remembered far more easily by their resemblances than by their differences, yet there are striking exceptions to this rule, as the universal expe-

rience of mankind can amply attest. He who is hopelessly immersed in the depths of poverty would be far more forcibly reminded of his forlorn condition by the vision of a gorgeous mansion with its luxurious surroundings, than by the sight of some other humble hovel like his own. They whose "way of life is fall'n into the sear, the yellow leaf" can better realize the oppressive weight of their years by listening to the merry prattle of childhood, than by comparing their own situation with that of others whose sands of life, too, have nearly run. The malefactor, condemned to an ignominious death as the penalty for his crimes, never so truly appreciates the incomparable boon of life and liberty as when immured in the lonely cell from whence he is destined to emerge only to meet his deserved fate upon the scaffold; and the priceless blessings of health never stand out in such glowing colors before man's mental vision as when he is languishing on a bed of sickness. When the dreary blasts of winter are relentlessly beating about us, how vividly do we picture to ourselves the balmy days of early summer! When encompassed by the horrors of "grim visaged war," how alluring seem the delights of gentle peace!—and what can be so suggestive of the glorious sunshine as being shut up in total darkness? But, powerful though Association by Contrariety may sometimes be, yet its influence is limited to but narrow bounds. Being based upon contrasts, it can be made available only when contrasts exist—and even then they must usually be strong, and are seldom effective

except from the standpoint of adversity. The enjoyment of plenty does not remind us of the miseries of want; light seldom suggests darkness; nor does the possession of robust health suggest the pangs of disease. To have our liberty is not to thus be reminded of a prison cell; the sunshine of prosperity does not suggest to us the shadows of adversity; nor when we are in the heyday of youth do we think upon the infirmities of age: pleasant subjects seldom suggest unpleasant ones—although unhappy experiences are pretty certain to remind us of their opposites. Thus, Association by Contrariety can hardly be said to deserve being classed as an independent associating force, but rather as a branch of Association by Similarity.

Another form of Natural Association is that of Contiguity, or Adjacency; and this may be subdivided into Contiguity of Thought, and of Vision.

In the reception and storing away of concrete ideas (as of things or events) by the mind, as in Incidental Association and Association by Similarity, their consideration in continuous order is not so essential to their retention in the memory as in the case of ideas of an abstract nature, in which latter their successive contemplation by the mind would be more necessary in order that each impression might be made with sufficient distinctness and force to weld it to its predecessor. This branch of Natural Association would properly come under the head of Contiguity of Thought—which would also include so-called "verbal-memory," or the recollection in its exact phraseology

of anything heard or read—the retention of each idea thereof in the memory being mainly dependent on *consecutive* vivid conceptions, made *seriatim* of all the terms of its series or connection.

Contiguity of Vision is where there is presented to the sight a number of things simultaneously, which may be of a varied character and situated at different distances from the point of vision, and which are not viewed in any particular order, but in a casual way, it may be, or at the pleasure of the observer, which through a developed sense of their association may be recalled at will, in any order desired—or the whole may be brought before the mental vision at the same time; as, the recollection of various objects in a store-window, or the prominent features of a landscape—or, in fact, any aggregation of objects to which the eye has been attracted.

This form of association, being confined mainly to sight perceptions, is of a far less exalted character than Contiguity of Thought—which latter is the most important and valuable of all kinds of association; and while it is to a great extent instinctive in its operation, yet it may be greatly cultivated by proper training.

Artificial Association is employed for memorizing isolated facts, events and circumstances, and ideas generally, where no natural relationship is apparent. If that is done in a systematic manner, however, it may be made to merge, in a certain degree, into Natural Association—as comparisons may be conceived and resemblances discovered which would not be disclosed

under ordinary conditions. Things represented abstractly, as in the case of numbers, or proper names, or different events happening at the same time or place but bearing no relation to each other, would be connected by Artificial Association, as would heterogeneons facts in general.

Thus astronomers, by arbitrarily grouping the stars into constellations, are able to memorize their positions far more easily than without this artificial aid.

Various historical facts can also be recollected much more readily and certainly by means of Artificial Association than without its assistance, for a careful search through the pages of history reveals some curions coincidences. For instance, we learn that Plato was born in the same year that Pericles died (B. C. 429). We discover that Aristotle and Demosthenes were both born in the same year (B. C. 384), and also died in the same year (B. C. 322), which was the year following that of the death of Alexander the Great; and that Ovid was born in the same year that Cicero was put to death (B. C. 43). 1564 was in some respects the most remarkable year since the dawn of the Christian era—for in that year Michael Angelo and Calvin died, and Shakespeare, Marlowe, Galileo, and Buxtorf came into the world. In the year that Marlowe died (1593) Izaak Walton was born, he dying in the same year that Middleton was born (1683), the latter dying in the year that Curran was born (1750). In the year that Galileo died (1642) Richelieu also died, and Newton was born. In the year that Newton died (1727) Gainsborough was born.

It is related that Diogenes and Alexander the Great both died on the same day (in B. C. 323); and that Shakespeare and Cervantes also died on the same day (April 23, 1616), it being the former's birthday. Ex-Presidents John Adams and Thomas Jefferson died on the same day (July 4, 1826), exactly half a century after the Declaration of Independence; and James Monroe just five years later (July 4, 1831).

The first five presidents ended their terms of service each in the sixty-sixth year of his age, and, had John Quincy Adams been elected for a second term, he also would have ended his term in his sixty-sixth year.

The name of our first martyred president can never be effaced from the memory of the American people; and the name of the vice-president who served during his first administration need not be forgotten, for, most fittingly in every sense, it is literally—imperishably—interwoven with the former's name, as is here indicated: abraHAMLINcoln.

Franklin Pierce was elected president in 1852. How easy to recall the date by bearing in mind that the last two figures denote the number of weeks in a year. He was the fourteenth president; that is indicated by F. P., the initials of his name, and by the further fact that there are fourteen letters in his name. It may be adverted to as an interesting circumstance, that his has been the only administration thus far in which no cabinet changes occurred during the entire term.

Enoch's age when he was translated was 365 years.

The poet Claudian was born in 365, which corresponds with the number of days in a year. That, also, is the number of islands contained in the Bermudas.

In 580 Latin ceased to be a spoken tongue: the Catacombs of Rome are 580 miles long.

The word VIBGYOR was long ago coined by Dr. Watts to assist students in recollecting the names and order of the primary colors (those developed from the solar beam by the prism)—the initial letters of those names, in their order, forming the word above-mentioned, thus:

Violet.
Indigo.
Blue.
Green.
Yellow.
Orange.
Red.

(A real phrase, BY VIGOR, would be a less cumbersome key, though tagged with the need of a slight central adjustment to fit this order.)

The word CABAL is said to have originated in the time of Charles II.—the initial letters of the names of his Cabinet Ministers forming the word, thus:

Clifford.
Ashley.
Buckingham.
Arlington.
Lauderdale.

The initials of the words denoting the four points of the compass form the word NEWS—whence its origin.

Every musical student remembers that one of the first things he learned was that the letters in the spaces of a musical staff form the word FACE. The sentence "GooD AlE and BeeF" was long ago invented to assist the student in recollecting the names of the major keys containing sharps—the first and last letters of each word, excepting the conjunction "and," denoting the keys in regular progression.

The four parts in a mixed vocal quartette, in their be represented by the word BEAD, the letters thereof indicating the keys in their regular order.

The four parts in a mixed vocal quartette, in their proper order, may be represented by STAB, which may be used either backwards or forwards—the initial letters of the words indicating the various letters forming the acrostic, thus:

Soprano.
Tenor.
Alto.
Bass.

The acrostic A PALM VALE includes the principal terms used to denote time, or *tempo*, in musical compositions, thus:

Allegro: Fast.
Presto: Very fast.
Adagio: Quite Slow.
Largo: Very slow.
Moderato: Moderately fast.

Vivace: With briskness.
Andante: Somewhat slow.
Lento: Slow.
Energico: With energy.

The Chinese vocabulary is said to consist of about 43,560 words or idea-characteristics, which corresponds with the number of square feet in an acre.

There are 24 hours in a day; add one cipher and we have the number of bones in the human body; add four ciphers and we have the distance in miles to the moon; there are also 240,000 varieties of insects.

Those examples of Artificial Association are given to show how facts which are of a more or less isolated character may be securely tied together, as it were, by intelligently combining certain accidental features and associating them in the mind: the remembrance of one is apt to recall another, and that may bring to mind still another—and so on, until much may be revived in the memory that would otherwise have faded away from the lack of strength in the original incidental associating forces. While it is true that no solitary idea can remain in the memory, yet it is demonstrable by easy experiment, as we have indicated how, that many an idea which would otherwise disappear through the absence of a cognate idea with which to become promptly associated, may be indelibly preserved in the memory through the proper employment of Artificial Association.

Usually when an idea knocks for admittance to the memory, there is no certainty that the mind can be re-

lied on to at once respond with an associating idea to which the new-comer may be firmly linked. If existing at all, the relationship may be so obscure as to render the formation of a natural association that will be of an enduring character extremely doubtful: in such case the only reliable hope of attaining the desired object will be through the intelligent exercise of Artificial Association; and in how to perform that to the best advantage, and in how to most profitably employ Natural Association in the storing of ideas, consists the great Art of Memory.

Let it be borne in mind, then, and moreover, that while the depth of impressions will naturally diminish more or less with advancing years and a brain continually becoming less plastic, yet the capacity to form associations is naturally augmented by experience and may be wonderfully increased by practice, which increments of advantage should long make ample amends for any decrease of primary receptive power; and by them may always the most avail be derived from the least labor. By employing proper methods of association, that only is preserved in the memory which is deemed worthy of retention, it being stored away carefully and properly indexed, so that it may be brought forth at will.

In memory development the first thing is to impress, and the next to associate—and the association should be made as promptly as possible, in order that other, and perhaps wholly irrelevant, impressions may not intervene to weaken the association; and let it also

be remembered that the impression should first be clear and vivid before any association is attempted, for strong and enduring associations cannot be formed with weak impressions. And it should be further observed that all associations should be in pairs—that is, no more than two ideas or sensations should be considered together (all others being excluded as completely as possible, and at least from direct contemplation for the time being), and those two should be intently regarded and compared with each other until a complete association is formed in the mind before proceeding further.

The impressions which we derive through Incidental Association may be said to almost invariably form themselves, so to speak; that is, to come into existence without our effort, or even consent: while in nearly all other cases the associations are largely of our own making, and, as to whether they be strong or weak, properly or improperly formed, the responsibility rests mainly with us. In Artificial Association it is entirely so, and in Natural Association it is the case to a very considerable extent.

While there is a certain intuition, or natural selection, in a great degree, in Natural Association—ideas which have an affinity for each other instinctively clustering together in the memory—yet the value and permanence of the associations formed depend largely on their degree of appositeness perceived and the thoroughness by which are strengthened those ties of relationship whereby the various impressions are linked

together—and, that keenness and discipline in those regards shall be attained and developed most advantageously in his case, should be the aim of every one who desires the real and permanent improvement of his memory. The forming of inapt associations should be most jealously guarded against, for they are productive of incalculable harm, leading the memory by imperceptible degrees into careless and immethodical habits, from which it ultimately will be unable to break away except by the most severe discipline—while the observance of the true laws of association will enable the memory to not only become richly stored with those things which are the most worthy of preservation, but to increase in power to a degree that can scarcely be exaggerated—for the possibilities of the memory are truly beyond estimation—the capacity of that mighty auxiliary of the mental senses is indeed well-nigh illimitable!

CHAPTER VII.

CLASSIFICATION OF MEMORY.

Impressions reach the memory mainly through three channels, which may be termed, respectively, the senses of Sight and Sound (Hearing), and the faculty of Thought, or Reason.

The remaining senses of Taste, Touch, and Smell also convey impressions to the memory, it is true; but these, being comparatively insignificant in the scope, amplitude, and suggestiveness, of their functional power in that regard, need not be particularly considered in connection with memory development.

The impressions produced on the mind and senses through the agency of Sight, Sound and Thought, may be divided into two classes—passive and active.

Sight and Sound impressions are purely passive in their nature, while Thought impressions may be either passive or active, or a combination of both. For instance, anything which we see or hear is an impression produced on us by something existing outside of our mentality—while that which is apprehended through our thought, or reason, may either proceed from extraneous sources or be caused wholly or partially

within ourselves; thus, anything that we *do*, whether by word or act, may make as strong and enduring an impression on the memory as what we see or hear: and what we do—that is, any volitional act that we perform—is inspired by Thought, either conscious or unconscious.

"Thought" impressions, therefore, cover the widest field of all, and, being more evanescent in their nature than the others, are properly the main consideration in memory culture.

The impressions which are the most readily treasured in the memory are those of Sight—their reproduction being in general purely mechanical, and the effect imaged forth anew, as it were, upon the retina of the eye, their faithfulness of detail depending chiefly on the attention, or fervor, with which the impressions were first received. The endeavor which we sometimes make to recall sights or scenes once witnessed, is not specifically an exertion of the intellect, but is an attempt to put our mind into the same state as when the original impression was formed; and it is upon the degree of success which we attain in such efforts that depends the integrity with which impressions are revived; that fact is true not only in regard to impressions of things seen, but also has a bearing with respect to all other departments of memory.

"Sound" impressions come next to those of Sight in the permanence with which they establish themselves in the memory; and that they are thus secondary to the impressions of Sight is due chiefly to two causes:

In the first place, there are not the possibilities of variety, at least of pleasure few will deny or question, in Sound impressions that exist in those of Sight—and thus the element of interest, or curiosity (so valuable as an aid to the memory), is not exerted to the same extent in the former as in the latter case, to stimulate the retentive powers of the memory. In the second place, what is heard cannot produce as clear an impression as what is seen—the receptive powers of the eye being, appropriately in the conditions of man's environment, superior to those of the ear—therefore the reproduction cannot be as vivid, and as faithful in detail.

Except where otherwise indicated, as in the next illustration, in the generic comparisons made in the chapter between Sight and Sound impressions, it is understood that both are placed on the same basis—the impression in each case being considered as sensorial merely, and not as involved in its incidence with circumstances of acute emotion or any more than the most minor necessarily coincident exercise of the intellectual faculties: thus Sounds, so combined as to represent Ideas, as in the case of oral utterance, are, as to proper perception, blended with Thought impressions, and accordingly when incident conformably to the conative impulse do not create sensations which are independent of those impressions, nor may their recollection become so while the latter remain in the memory; so that Sound impressions are not in general to be understood as including anything which expresses Ideas any more than are those of Sight.

A realizing sense of the relative permanence of Sight, Sound, and Thought impressions may be attained without limiting ourselves to those just referred to as occurring practically separate, by taking a mental review of the experiences of early years. Of what we *saw* we find a great deal impressed on our memory in most vivid and enduring colors—but how much, comparatively, does the memory retain of the sounds we *heard?*—forgotten, probably, are even the voice tones we once knew and loved. A few stray chords of lullaby, or the like, may still respond to recollection, it is true—but when summed up, how little they all amount to, compared with the memories of what we *saw!*—And the *thoughts* that passed through our mind—what do we remember of *them?* and to what a very trifling extent can we reproduce those same thoughts at will!

Let us take another and more distinctly specific illustration: A person starts off for a pleasant foot-jaunt, purposing to treasure in his memory all that he can regarding the scenes and incidents of his stroll—what he shall see and hear and think. He ranges among hills and valleys, through woods and along streams, feasting his vision on picturesque landscapes and wandering amid varied scenes of sylvan and other rural beauty. In after-time what will he remember best—that which was seen, or what was heard, or the appropriate reflections which passed through his mind during the excursion?

To all that there is but one answer: The Sight im-

pressions will be by far the most vivid and permanent of all, the Thought impressions the least so; the memory being thus proved to require a greater amount of cultivation for the retention of the latter, than in the case of either of the other two classes.

Things that we have seen require but little association with aught heard or thought, to be revived in the memory—while sounds heard, unless familiarized by repetitions, need to be more or less associated in memory with the surroundings or accompaniments of their incidence in order to be remembered with any degree of accuracy. Thus, an event occurs in our experience which produces a very deep impression on our mind at the time. In recalling it afterwards, that which we *saw* comes first to our memory, that which we *heard* next, and what we *thought* last—the Sight impressions being the most independent of all, as well as the most lasting, while it is usually extremely difficult to revive a particular train of thought in the mind after a lapse of any considerable length of time; therefore Thought impressions require by far the greatest attention in memory culture—for that which instinctively or unconsciously engraves itself upon the memory is naturally far more easily reproduced than that which ordinarily depicts itself only in transitory and soon fading colors and must depend for its revival on a sheer effort of the will, necessarily more strenuous by far if without the reinforcement of a systematic association of the original ideas, or impressions.

But while it is true that anything seen, heard or

thought creates its own proper sensation, yet the sensations often mingle with each other so indistinguishably in their incidence that they seem, at the time, as if blended in one impression. That semblance exists only at first, however—the impressions, as time progresses, becoming more and more separated in the memory according to their respective degrees of vitality; those which are the most enduring in their nature remaining delineate in spite of the disintegrating hand of Time, and those which are the most evanescent gradually becoming less distinct in their features and depending chiefly on association with other impressions for their recognition and availability.

It is the province of mnemonics to equalize the various classes of impressions as much as possible—or rather, to lift the lower up towards the higher—to increase the vitality of that which has inferior powers of endurance—to strengthen this and that weak place, so that what is ephemeral may become more lasting—that which is inherently weak may be made more strong—the mediocre be made to reach toward the excellent.

On the theory that all impressions are more or less blended together, some mnemonicians have divided memory into only two kinds—Mechanical and Intellectual. Others have classified it into "Topical," or the recollection of events in the order in which they happened; "Rote," or the remembrance of anything spoken or written in the exact phraseology in which it was uttered or read; "Intellectual," or the recollection

of anything by noting its resemblance to something else already in the memory; and "Imaginative," or the power of imaging forth in the mind past sensations in their original form, or nearly so.

The latter is undoubtedly a logical (though it be not a scientific) classification, considering memory in the broad sense of a blended or compound impression, —for *inter alia*, it is manifest that events in which we have personally participated are the most easily recollected of all, while the reproduction of a former state of mind is the most difficult—those two representing the lowest and highest grades of memory power. But on the basis of that classification it would seem difficult to construct a practical memory system whose mastery would enable the average individual to materially improve his memory powers in the especial lines in which he might be interested; a classification of memory by *grades* rather than *kinds*, though accompanied with hints or suggestions on how to advance from one grade to another, can prove of but little practical benefit in improving the memory.

"Imaginative" memory, as above defined, cannot be possessed by the average individual—it can belong only to genius—and the man of genius "is born, not made." A graded classification of memory, and general hints on the cultivation of that faculty, do not suffice for its development from the practical, individual, standpoint. It is not enough that the student should be told that the various grades of memory are thus and so—that one particular grade is the lowest,

and some other one the highest; and that he may start at the lowest round of the ladder of Memory, and by attention and perseverance be assured of eventually reaching the top. Practically regarded, such teaching is what makes the "jack-of-all-trades, the master in none" of real mnemonics' diverse curricula. General suggestions for improving the memory might indeed be given which would be not without value—but that is not enough; there should be specific directions for the cultivation of each department of memory, so that the student may know just what to do in order to develop any particular branch that he desires; and while there are but three main channels by which most impressions reach the memory, yet memory has many subdivisions; and as *it is one of the peculiarities of the mental organization, that the cultivation of one generic branch of memory is of little or no assistance in the improvement of another*, it follows that each department of memory should be considered by itself—by which means, moreover, the memory student will be enabled to first attain practical results of benefit and efficiency in the particular branches in which he is especially interested.

For the essential purposes of memory education it is not strictly necessary that the various classes of impressions (differentiated as to channels) should be considered separately—for the impressions which are most worthy of being treasured in the memory are really those which are a combination of two or more classes: thus, the particulars of a lecture are better remem-

bered when the lecture is illustrated than when it is not; the retention in the memory of the details of a musical entertainment is assisted by the sight of the surroundings and by the individualities of the performers; in reading a narrative, the scenes and incidents are more easily impressed on the memory if the book is replete with illustrations than as if it is without them.

For the purposes of memory culture, then, we will consider memory as being a combination of two or more classes of impressions, and proceed to ascertain how many *kinds* of memory are recognizable—in other words, to resolve it into various divisions and subdivisions, so that we may be the better able to determine specifically what is desirable of accomplishment in memory development, and then see about the adoption of practical means for attaining the end sought.

Memory may be separated into the following general divisions:

Locality.
Form.
Color.
Figures.
Events.
Facts.
Discourse.
Literature.
Diction.
Proper names.
Music.

Those various divisions or departments of memory will be considered in the pages which are to follow, and rules and suggestions given for cultivating each particular branch—all of which are offered after the expenditure of many years of earnest research, reflec-

tion, and experiment, and in the firm conviction that by a faithful observance of the methods thus set forth, the powers of the memory will in each case be strengthened and expanded in a multiplied and continually increasing degree—and not to the detriment of intellectual growth, but to its positive and material enhancement, leading to a larger manhood. Each individual who by such or other means awakens within himself a broader mind, with its just concomitant, a nobler, a better-developed soul, by so improving himself must necessarily, in some degree at least, raise the level of his kind—helping to forge "a closer link betwixt us and *the crowning race*" which slowly evolving humanity shall be in some far-off time—

"Of those that, eye to eye, shall look
On knowledge; under whose command
Is Earth and Earth's, and in their hand
Is Nature like an open book."

CHAPTER VIII.

LOCALITY.

"How we delight to build our recollections upon some basis of reality—a place, a country, a local habitation!"

WASHINGTON IRVING.

That department of the memory through whose function a place or locality once seen may be readily recognized on being visited afterwards, is termed "Locality" memory. It includes not only the remembrance, in a general way, of the locality itself, but also of the surroundings in all their essential details, so that a route once traversed can be retraced without hesitation at any subsequent time.

The memory of locality perhaps comes nearest to being instinctive of all departments of the memory. Certain animals, birds, and even insects, possess this faculty in a marvelous degree. Bears, tigers, wolves, panthers, and other predatory animals, are able to travel long distances from their favorite haunts and to return with speed and certainty. Dogs and cats have

the faculty of "locality memory" developed in perhaps a higher degree than any others among the domestic animals. Numerous instances are known of dogs being conveyed many miles from home by strange routes, and of finding their way back with the utmost readiness. Cats also have a wonderful instinct for returning to a familiar spot, even though carried long distances away, through wholly unfamiliar scenes. Robins, after flying many hundreds of miles to the southward on the approach of winter, have returned to the same spot in the following spring. The remarkable memory of locality possessed by the carrier pigeon is also well attested. Bees frequently fly miles away from their hive in search of honey, but who ever heard of their failing to return home through forgetfulness of its location?

Tartars, Bedouins, Gypsies, and other nomadic tribes possess "locality memory" in a wonderful degree. American Indians find their way with the utmost ease—whether it be on the boundless plain or in the trackless forest; and the remarkable experiences of distinguished travelers and explorers such as Marco Polo, Burton, Speke, Livingstone, Stanley and many others, bear abundant evidence of similar abilities possessed by the Caucasian race;—and who is not familiar with the name of "Kit" Carson, the famous scout and explorer of the far West who flourished in the "forties" and "fifties," and who proved of infinite service to the "Pathfinder" in many of his explorations?

Louis XIII. could, after a year's absence, draw from memory the plan of a country, in all its details.

Gen. Custer had an extraordinary memory for locality. The physical features of a place once visited by him remained firmly fixed in his memory, as he abundantly proved at various times during the great Civil War. In 1861 he was on the staff of Gen. Banks when the latter was stationed in the Shenandoah Valley, which was then a network of bridle-paths and blind roads, that an average man could hardly hope to become acquainted with in years. In 1864 Custer was again sent to the same locality with orders to devastate the valley, destroy the food supply of the enemy, and harass him in other ways.

One of Custer's associates tells of an occasion when the general had received information that a body of Confederates was in a certain locality, and determined upon their capture if possible. One of the first questions was as to the proper route to be taken. No one seemed to know, and no guide could be procured. Custer, however, was equal to the emergency. Placing himself at the head of a detachment of troops, he marched on the main road until arriving at a certain bridle-path, into which he turned and made a short cut across the country, arriving at Fort Royal at about 6 p. m. Here it was necessary to cross a fork of the Shenandoah River, but unfortunately for their purpose, the bridge situated at this point had been burned only an hour or so previously by the Confederates, just after having crossed it. Custer, however, had been

there before, and remembered that there was a ford not far off. It was soon discovered about half a mile above the bridge, and the troops were thus enabled to cross the stream without difficulty. A new perplexity then arose. A mountain must be climbed which was covered with timber, with no indication of a road or path. Custer without hesitation led the way for another half-mile up-stream until reaching what looked like a rift in the mountain, but which proved to be an old road, rough and seldom used. The ascent commenced and the journey was continued through most of the night, the progress of the troops being impeded not a little by boulders and fallen trees. But the long and wearisome march was at last rewarded by the capture of the whole band of Confederates, who, deeming themselves perfectly secure, were completely surprised in their camp just before daybreak, valuable stores and several pieces of artillery being also taken.

These illustrations serve to show that while "locality memory" is, in a great measure, instinctive, yet that it may be cultivated to a remarkable degree, even in cases where there seems to be no natural aptitude for recognizing places. The extraordinary memory of locality possessed by some of the world's greatest travelers and explorers could not have been attained except by severe self-discipline; what is largely instinctive in others came to them mainly through close, intelligent observation — and perseverance. Not every one, it is true, can be a Custer, a Du Chaillu, a Mungo Park, or a Daniel Boone — but excellent "locality mem-

ory," sufficient for all uses that are likely to ever occur, may be acquired by almost any intelligent person who properly directs his energies to its attainment.

And now as to the method:

In the first place, habits of *observation* must be cultivated; the eyes must always be alert to notice essential details of the surroundings—that is, the features which are of a *passive* or *permanent* character, rather than those of an active or changeable nature, for "locality memory" deals with the *inert*, and not the animate—with *things*, and not with persons or creatures.

But, even with fairly trained habits of observation, it is not the same thing to thread one's way amid the crowded thoroughfares of a great city, as to successfully direct his footsteps in the forest, on the plains, or among mountain fastnesses. The inhabitant of a city, though he may be familiar with the devious windings of its streets, easily gets lost among the solitudes of Nature; the denizen of the woods, prairies, or mountain retreats loses his "bearings" on attempting to penetrate the mazes of a Boston, a London or a Rome. The citizen, unused to guiding his course by the points of compass, is apt, in a strange place, to be "turned around;" the woodsman is likely to be embarrassed by the strangeness of his environment when in a large city; he becomes confused by the ceaseless motion of the vast throng that surrounds him. A different kind of observation is required in one case, from the other, and proficiency in either can be gained only by diligent practice.

The untutored savage, however, can learn to find his way, even in such a labyrinth as Boston, far more readily than can the city-bred person retrace his steps on the silent plain or through the lonely forest—for the training of the former has been more thorough; he has traveled miles while the other has traveled only rods; he had many physical obstacles to contend against which have been of material assistance in the education of his powers of observation, while the other's perplexities in that regard have been but few.

In the acquirement of "locality memory," the most vital requisite of all is—*observation*, which is, in fact, the foundation-stone. Before a journey is undertaken whose course is not familiar, a map of the proposed route should be obtained if possible and thoroughly studied, particular note being taken of the location of mountains or lakes, the trend of plains or forests, and the course of valleys or streams. During the journey the scenery at various points should be closely observed—especially any conspicuous objects that present themselves, such as large trees, rocks, etc. If there are intersecting roads or trails, their direction should be carefully noticed, and after passing them the traveler should turn around and look at them as if approaching from that direction—being the *return* view. After the day's journey is ended it is well to make a rough plan or sketch of the route traveled, as that will be a most efficacious means of impressing it on the memory.

One of the most difficult things for any except an

experienced traveler is to walk in a straight line. There is a strong tendency in most people to keep curving to the right, until, ultimately, a person may travel a complete circuit, returning to the place from whence he started, as has been known to occur in experience. This tendency can be counteracted in two ways: First, by adhering rigidly to the geographical course determined upon, using as a guide either the sun, a star, or the magnetic needle. Second, on determining the course to be taken, the eye should be fixed on as distant a point as practicable and the steps directed towards that spot, without swerving to either the right or left; as the point is neared another point on the same straight line and farther on, should be sought by the eye—this plan being continued while the same course is maintained. On going over a hill it is an excellent plan to take three poles or sticks and place them on the course that is being traveled, sighting them in carefully so that they shall be in a perfectly straight line—then to take the last one and place it in front of the others, and continue the same process until some conspicuous point can be sighted beyond the hill, to which the steps should be directed as before. In either of the above ways the tendency to keep turning to the right may be effectually counteracted.

The inexperienced traveler, finding his course obstructed by a lake or swamp, which he must go around, seldom travels *far enough;* and then, having, as he thinks, attained his course on the opposite side, he de-

flects too much towards the direction which he took in starting to go around.

The following diagram illustrates this error—A B C D indicating the route naturally taken by the unpracticed traveler—and it is an error commonly made when proper precautions are not taken. The way to obviate it is as follows: On approaching such an obstruction the line or course should be produced by the eye across the lake or swamp, and some prominent object sought for on the line thus projected, or as near to it

as possible. At the same time some conspicuous object should be selected or placed near the observer, which can be seen from the other side when it shall have been reached; by these means the desired point may be attained to and the direction preserved—the further production of the line or course being easy.

The person who is journeying amid strange scenes should take especial care not to lose sight of the points of compass, for this knowledge is indispensable to the traveler who would direct his course in an intelligent manner.

To determine the direction which is to be traveled, any one of several means may be employed. The most reliable guide is a compass, which should be kept within easy reach at all times.

In order to use a compass intelligently it is necessary to bear in mind that the needle points, not to the *true* pole, but to the *magnetic* pole. The North magnetic Pole is about 1,360 miles from the North true Pole, and the South magnetic Pole about 1,150 miles from the South true Pole. On account of this difference in the position of the magnetic and true poles, there are but few well-known points on the earth's surface where the magnetic needle points exactly to the north or south, and thus it is essential to know approximately how far east or west of due north or south the needle points—in other words, what is its *variation*.

Here is a table showing the variation of the magnetic needle at several points on the earth's surface:

NORTHERN HEMISPHERE.

Pekin, 3° 00′ West.
Calcutta, 2° 54′ East.
Bombay, 0° 47′ East.
Constantinople, 3° 56′ West.
St. Petersburg, 0° 24′ East.
Berlin, 9° 52′ West.
Rome, 10° 20′ West.
Paris, 15° 00′ West.
London, 16° 36′ West.
New York, 8° 48′ West.
Chicago, 3° 36′ East.
St. Paul, 8° 50′ East.
Helena, 19° 32′ East.
Denver, 13° 50′ East.
San Francisco, 16° 36′ East.
New Orleans, 5° 36′ East.
Galveston, 7° 05′ East.

SOUTHERN HEMISPHERE.

Melbourne, 8° 08′ East.
Cape Town, 29° 06′ West.
Buenos Ayres, 9° 10′ East.
Valparaiso, 14° 49′ East.

If the traveler does not possess a compass, the sun or a star may be used as a guide; when they are obscured the base of the largest trees should be examined for moss, which, when found, will be noticed

growing mostly on the side which is shielded from the sun's rays—viz., the north side of the tree in the Northern hemisphere and on the opposite side in the Southern. The proper way to use the sun as a means by which to indicate a particular point of compass will be explained in a subsequent part of this chapter.

The method of using a star to establish a designated course is, generally speaking, the most reliable of all. The ability to travel in any desired direction by aid of stars is of incalculable advantage to the traveler, and the subject is therefore deemed worthy of especial mention in this connection.

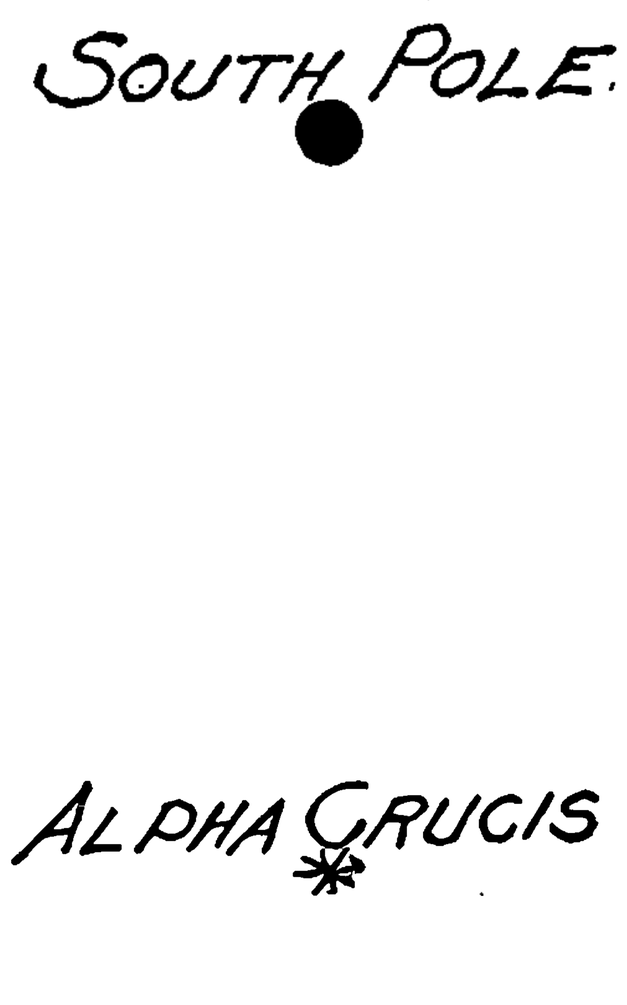
Among the stars in the northern celestial hemisphere, *Polaris* (commonly termed the North, or Pole, Star) is the most useful to the traveler, as it never varies more than 1° 15′ from true north, and can be easily located by means of the group of stars known as the "Dipper," or "Charles' Wain," comprising the most prominent portion of the constellation *Ursa Major* ("Great Bear"). The *Dipper* is composed of seven stars, of which a diagram is here given, showing the relation of *Polaris* thereto. The star represented by D in the accompanying diagram is of the fourth magnitude; G and all of the others, including *Polaris*, are of the second magnitude. The two stars farthest from the handle of the "Dipper" (F and G) are termed the "indices," or "pointers;" if produced about five times the distance from F to G, the line will be to the left of *Polaris* about half the distance between F and G. (It may here be remarked that *Polaris* is one of the

seven principal stars in the constellation *Ursa Minor*—"Little Bear"—being at the tip of the tail).

The following diagram shows the relative position of the various stars forming both *Ursa Major* and *Ursa Minor*:

All stars whose distance from the pole of the heavens is less than the latitude of the place of observation, *seem* to move in a circle around that point once in each day, a star at or very near the pole appearing fixed. *Polaris* is so near the pole as to appear fixed

and serves all practical purposes, as far as the Northern hemisphere is concerned, to mark a north or south direction, and it is easily located. To an observer at the equator, *Polaris* appears close to the horizon, never rising more than 2° above it. In latitude 30° north it appears very nearly one-third of the distance from the horizon to the zenith; at 45°, nearly half way—and so on; at the North Pole it would appear almost directly



overhead. In the Southern celestial hemisphere there is no conspicuous star near the pole, but there is a prominent constellation called the "Southern Cross," consisting of four principal stars (a diagram of which is here given), the constellation being considered as on the meridian, above the Pole. *Beta* and *Gamma* are of the second magnitude, *Delta* of the third, and *Alpha Crucis* of the first magnitude—being also the one nearest to the South Pole.

The principal star of this constellation *(Alpha Cru-*

cis) can be made use of to ascertain any given direction from February 1st until about July 20th—it being below the horizon at night during the remainder of the year. As this star is situated some distance from the Southern Pole of the heavens, and is therefore constantly changing its apparent position, it is necessary to know the month, day and hour when the observation is taken, as well as the approximate latitude, in order to determine how many degrees east or west of the meridian the star is situated when observed.

Tables are here given of the angular distance of *Alpha Crucis* east or west from the meridian on the first of the month indicated, at 10 p. m., in various latitudes. This angular distance is called the "Azimuth," and is measured on the horizon from the meridian to a point perpendicular to the star observed. The altitude of *Alpha Crucis* at each of the above dates is also given—the knowledge of which will be of assistance in its location. (The "Meridian" is a North and South line, which the sun crosses at mid-day. The "Altitude" of a star is its angular distance above the horizon—the distance from the horizon to the zenith being 90°.) In all cases the nearest degree is given, and the time is "*local*," *mean* time.

Date.	Equator.		Lat. 10° S.		Lat. 20° S.		Lat. 30° S.		Lat. 40° S.	
	Azim	Alt.	Azim.	Alt.	Azim.	Alt.	Azim.	Alt.	Azim.	Alt.
Feb. 1.....	27° E.	3°	28° E.	12°	30° E.	20°	32° E.	29°	36° E.	38°
March 1.....	23° E.	15°	25° E.	24°	28° E.	33°	31° E.	42°	38° E.	50°
April 1.....	12° E.	25°	13° E.	34°	15° E.	44°	18° E.	54°	26° E.	63°
May 1.....	3° E.	28°	3° W.	37°	3° W.	47°	4° W.	57°	6° W.	67°
June 1.....	17° W.	22°	18° W.	31°	21° W.	41°	25° W.	50°	33° W.	59°
July 1.....	25° W.	12°	26° W.	21°	29° W.	31°	32° W.	44°	37° W	48°

Should the observation occur at any other date or in any other latitude than that given in the table, the proper angle can be easily ascertained by a simple proportion, thus: Suppose the observation were taken on April 15th, in Latitude 25° S. In Lat. 20°, on April 1st, *Alpha Crucis* is 15° *east* of due South; on May 1st, it is 3° *west;* on April 15th, therefore, the angle would be half way between the two—or 6° *east.* In Lat. 30° the angle on April 1st, is 18° *east;* on May 1st, it is 4° *west;* on April 15th, therefore, it is 7° *east.* The deflection for Lat. 25° would thus be half way between 6° east and 7° east, being 6° 30′ east.

For any other date or latitude the angle may be ascertained by proportion, in the same manner.

As a guide for the remainder of the year, a very bright star named *Fomalhaut* is selected, the hour of observation being the same as in the case of *Alpha Crucis* (10 p. m.).

Fomalhaut is a first magnitude star in the constellation known as *Piscis Australis* ("Southern Fish"). It can be easily identified by its altitude above the horizon at the time of observation—that being the brightest star south of an east and west line at the altitudes given, and east or west of the meridian on the dates mentioned. As there are only nineteen first-magnitude stars in both the Northern and Southern celestial hemispheres, the identification of either *Fomalhaut* or *Alpha Crucis* at any period when either is visible will be easy.

The table of Azimuths and Altitudes for *Fomalhaut* is here given:

Date.	Equator.		Lat. 10° S.		Lat. 20° S.		Lat. 30° S.		Lat. 40° S.	
	Azim.	Alt.	Azim.	Alt.	Azim.	Alt.	Azim.	Alt.	Azim.	Alt.
July 1.....	60° E.	0°	60° E.	8°	62° E.	12°	64° E.	17°	68° E.	21°
Aug. 1.....	57° E.	24°	61° E.	29°	66° E.	33°	73° E.	37°	80° E.	39°
Sept. 1.....	42° E.	47°	51° E.	54°	64° E.	58°	82° E.	63°	101° E.	87°
Oct. 1.....	4° E.	60°	6° E.	70°	11° E.	80°	84° E.	88°	169° E.	80°
Nov. 1.....	39° W.	50°	48° W.	57°	63° W.	63°	82° W.	66°	104°W.	65°
Dec. 1.....	56° W.	28°	61° W.	33°	67° W.	37°	75° W.	41°	82° W.	48°
Jan. 1.....	87° W.	2°	87° W.	2°	88° W.	2°	88° W.	3°	88° W.	3°

The following tables will also be of interest in connection with the above, showing the time of day at which each of the stars is on the meridian, or due South from the observer:

ALPHA CRUCIS.		FOMALHAUT.	
Date.	Hour.	Date.	Hour.
February 1.....	3:30 A. M.	August 1.....	2:08 A. M.
March 1.....	1:40 A. M.	September 1.....	0:05 A. M.
April 1.....	11:42 P. M.	October 1	10:11 P. M.
May 1..... ..	9:43 P. M.	November 1.....	8:09 P. M.
June 1.....	7:41 P. M.	December 1.....	6:12 P. M.
July 1.....	5:43 P. M.	January 1.....	4:08 P. M.

Another way of finding any required course is by knowing its angular distance from the direction of the setting sun. There are two periods in the year when the sun rises exactly in the east and sets exactly in the west—at the time of the equinoxes, in March

and September; at all other times the sun rises and sets either north or south of due east or west.

A table is here given of the angular distances of the sun, at sunset, from the Southern point of the heavens for various latitudes in the Southern hemisphere, on the first of each month; the angle for any other date and latitude can be estimated by proportion, as before illustrated.

For example: On the equator, on Jan. 1st, the angle formed by the setting sun with a due South line is 67°; in other words, the traveler would face the sun and turn off an angle to the *left* of 67°, which would indicate a true South course—or 113° turned to the *right* would give a due North course.

On the same date, in 40° S. Lat., the angle of sunset with due South would be 59°: In the same latitude, 180° less 59° (or 121°) would indicate the angle of sunset with due North.

SUNSET AZIMUTHS.

Date.	Lat. 0°.	Lat. 20°.	Lat. 40°.	Lat. 60°.	Date.	Lat. 0°.	Lat. 20°.	Lat. 40°.	Lat. 60°.
Jan. 1.....	67°	65°	59°	48°	July 1.....	113°	114°	120°	142°
Feb. 1.....	73°	72°	67°	54°	Aug. 1.....	108°	109°	114°	128°
March 1..	83°	82°	80°	75°	Sept. 1....	98°	98°	100°	106°
April 1....	95°	95°	96°	100°	Oct. 1.....	94°	86°	85°	83°
May 1.....	105°	106°	110°	122°	Nov. 1.....	105°	74°	71°	60°
June 1....	112°	114°	119°	139°	Dec. 1.....	112°	67°	61°	42°

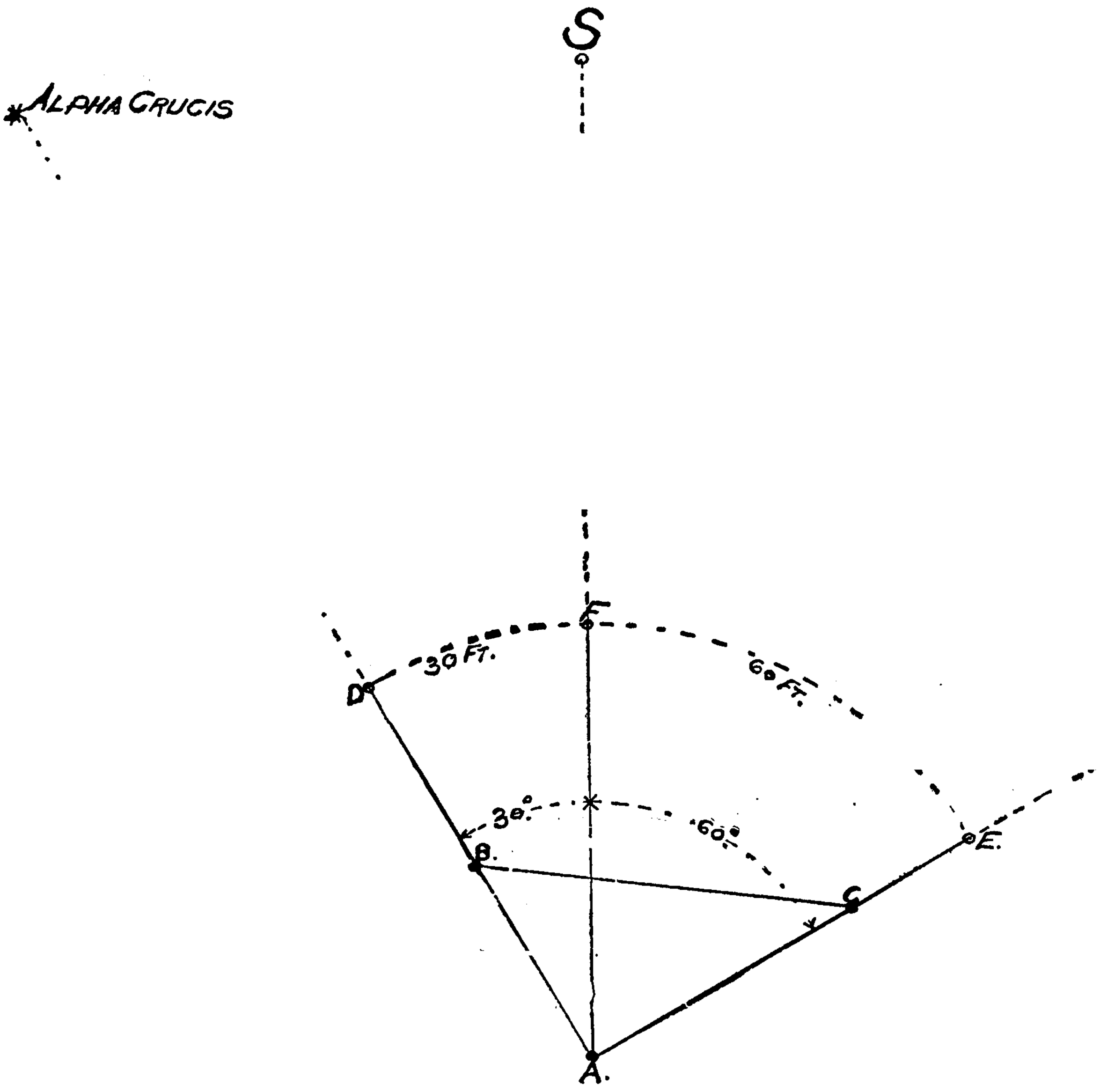
Having thus obtained the angle of the stars mentioned, or of the sun, with reference to the South point of the horizon for the latitude and date required, the

next thing is to determine the true North and South course, and, in the absence of any instrument for measuring angles, the following simple plan is recommended: It is a geometrical fact that a triangle with sides of 3, 4 and 5, or any multiple thereof, is right-angled. Bearing this in mind, the observer should first drive a stake into the ground at A in the accompanying diagram; then drive another stake at B 30 feet distant from A and on line with the star *Alpha Crucis*, or *Fomalhaut*, as the case may be. Another stake should next be temporarily driven at C 40 feet from A as nearly at a right angle with A B as can be estimated; if correctly placed, the distance from B to C is 50 feet, and the interior angle at A is an exact right angle, or 90°.

The next step is to measure on the line A B 57.3 feet (or 57 feet $3\frac{1}{2}$ inches) and drive another stake (D), and do the same on the line A C, driving a stake (E). Then the point A should be used as a centre—A D being the radius—and an arc described from D to E; this arc, it will be found, measures 90 feet, each foot of which represents a degree; then, from D measure on the line D E the number of feet corresponding to the number of degrees that *Alpha Crucis*, or *Fomalhaut*, is from the meridian; the point thus fixed (F) and A represents a due North and South course, from which any direction desired can be marked off in the same way; in case it is not convenient to use English feet as a measure, any other unit of measure will answer.

With the knowledge of the angle at which the sun

or any star is situated with reference to the meridian, it is no more trouble to mark out a desired course from it than from *Polaris*, unless a due North or South course is required.



In the diagram above referred to, and here given, it is assumed for the sake of illustration that *Alpha Crucis* (or *Fomalhaut*) is 30° West of the meridian.

To readily find one's way in the mazes of a large city—while far less difficult than to pick out his route amid the solitudes of mountain, plain, or forest—yet is

by no means easy, and proficiency in that regard can be acquired only through carefully trained habits of observation.

There used to be an Englishman called "Memory Corner Thompson," who possessed extraordinary powers of observation. In the presence of two gentlemen he drew, in the space of twenty-two hours, and solely from memory, a faithful plan of St. James' and Westminster parishes—also portions of St. Martin, St. Ann and St. Marylebone parishes. Included in this plan were all the streets, courts, alleys, lanes, squares and markets; all the houses of worship and public buildings; every tree, post and pump, and all the stables and yards—in short, every detail of any significance.

A party of gentlemen from one of the western states started on a trip to the World's Columbian Exposition, then in progress, each person providing himself, before his departure, with a map of the buildings and grounds, and a diagram showing the location of the principal exhibits. On arriving at their destination one of the gentlemen could find his way about the grounds with the utmost ease, without the aid of his map, and was familiar with the location of all the important exhibits and many of the minor ones, and knew where every interesting spot in the grounds was situated—while his companions knew but little of their surroundings, and on that account were compelled to either occupy valuable time in poring over their maps, or else had to rely upon him as their guide—which

they soon found themselves only too glad to do. Their companion had so familiarized himself with his map, in his leisure moments, that upon arriving on the ground he had little need of the map, as he carried in his memory the location of every gateway, building, bridge or road—in fact, of every prominent object within the grounds. While his companions had neglected to study their maps until the immediate necessity should arise, he had studied his map so intelligently and thoroughly that every detail was indelibly impressed on his memory, and thus he had a marked advantage over his companions when the time came to make a practical application of what he had memorized.

Here is another illustration. Some years ago a party of American tourists made an extended trip through Europe and certain portions of the Orient. While the trip was an entirely new one to them all, yet one of the party exhibited a familiarity with the various places at which his fellow tourists could not but marvel. On arriving in a strange city he was able to pilot his companions about with a readiness almost equal to that of a native. He knew the location of the most prominent buildings, was familiar with the names and direction of the principal streets, and could travel from one point to another without the slightest hesitation. He also knew the relative situation of various points, both as to direction and distance; in short, without having had a guide's experience, he seemed

to possess the requisite qualifications of one in a remarkable degree. The secret of it all was that, in intervals when there were no more important demands upon his time, he was studying his guide-book, and thus familiarizing himself with the cities and villages which they were to visit, and the routes over whch they were to pass.

On arriving in a city that he has not visited, the traveler should ascertain which are the most important streets, the loftiest buildings, the tallest spires, the location of the Postoffice and other public buildings, the best known stores and hotels, the principal churches, chief places of amusement, the system of street numbering, where the railroads and main street car lines are located, etc. When all this is known, or the greater part of it, the location of other places and objects becomes easy, for the less is readily remembered by knowing its reference to the greater; it is not necessary to know the points of compass—it is usually sufficient to know the relation of the streets of less consequence to the principal ones—but it is better to find out the direction of the main streets.

If the city be of considerable size, to get a pocket map and study it before starting out, will save much time and trouble; the location of one's hotel or place of sojourn should be specially marked on the map; then, on starting off, the surroundings should be carefully noticed; the street number should be jotted down in memory, also the names of the nearest

cross streets; then, in going about, the traveler should bear in mind how many corners are turned, and whether to the right or left, how various streets intersect, what and where are the prominent landmarks, etc.; one should frequently look backward, so that when the steps shall be retraced various objects may be easily recognized. A person can become pretty well familiarized with a strange city in a very short time, by the exercise of close and intelligent observation—by paying strict attention to whither his footsteps are tending, never allowing the mind to wander, but directing its activities wholly to the matter in hand.

No faculty which we possess is more deserving of faithful cultivation than Observation. It is the key-note to good "locality memory," and becomes of the utmost value while threading the mazes of a great city, or when journeying amid scenes of wild and uncouth life. He who scans closely his surroundings, and notes carefully where he is going, can scarcely fail to eventually acquire an excellent memory for Locality, and when he shall have once gained it he can rely on its proving a permanent possession—while he who plods carelessly along, paying little attention to what is about him and whither his footsteps are tending, will, whenever thrown amid strange scenes, be as a child in respect to the strength of his "locality memory"—and must ever continue so unless he shall apply himself sedulously to cultivating his powers of observation, and by so doing make amends, at least in part, for his neglect of similar opportunities in the past.

He, therefore, who is desirous of attaining proficiency in "locality memory" should avail himself of every fitting opportunity to put into practice such of the above methods as may be applicable in his case, and he will find, in the rapid augmentation of his power of recognizing the essential features of localities once visited, an ample recompense for the time and effort involved.

CHAPTER IX.

FORM. COLOR.

Memory of Form recognizes and retains the various details presented to the vision which combine in the formation of a being or thing, and their relation to each other, and is able to make a proper comparison of the same with details of other beings or things.

Its chief point of difference from Memory of Locality is in the fact that the latter deals only with *things* and with their *distribution;* that is, their position with reference to each other, without regard to their proportions—a general idea of their size, shape, and color being usually sufficient for the purposes required—while Memory of Form deals with both beings and things, taking cognizance only of the element of *proportion*, as applied thereto, and disregarding their relative *situation;* it has nothing to do with *size* (using the term in an arbitrary sense) nor with *distance*—but can compare details of *shape* or *configuration.*

Painters, Sculptors and Architects are especially endowed with Memory of Form; they see with their *mental* eyes forms which they have gazed upon, as well

as forms which have no prototype except in Fancy, and of which their handiwork often becomes the embodiment.

Michael Angelo had a memory of Form that was most notable. On a certain occasion several fellow-artists, among whom was Angelo, made a wager as to which one could the most faithfully reproduce some caricatures which they had recently noticed. The wager was easily won by Angelo, who made from memory an almost exact copy of the originals.

Cuvier, the distinguished naturalist, possessed such a wonderful memory of Form that when he had once examined any object belonging to the animal kingdom, however intricate its structure, its details never forsook his memory. Turner, the great English painter, could make a rough outline sketch of a landscape, and months afterwards fill in all the details, even the most trivial, with an accuracy that was almost inconceivable. Upon gazing carefully at a ship its details would become so thoroughly impressed on his vision that he could afterwards reproduce them from memory with absolute fidelity. Vernet and Doré could paint portraits with the most minute accuracy entirely from memory—indeed it may be accepted as a truism that a good memory of Form is a *sine qua non* of every great painter or sculptor. He who possesses this faculty carries in his mind vivid images of forms and scenes that from time to time have been impressed upon his sight—which images may be symbolized by a vast collection of pictures, any of which can be brought forth

at will and flashed upon the screen of his mental vision.

A Beethoven, while composing his immortal symphonies, *hears* an imaginary orchestra;—the majestic measures of exaltation—the gentle cadences of tenderness and of pathos—each strain of ecstasy—each wail of despair—all are vividly impressed on his *mental* hearing. A Sir Christopher Wren carries in his *mental* vision a faithful image of the St. Paul's Cathedral that is to be, for long before the corner-stone is laid. A Howe *mentally* beholds his sewing machine at work before the first stitch has been taken; and a Blackburne, or a Steinitz, as he simultaneously plays a dozen or more games of chess blindfold, *sees* the position of the men on each board, in turn, as he comes to play.

So, too, a Canova sculptures in fancy his "Theseus" ere the formless marble feels the first impulse of his chisel; a Rubens paints in imagination his famed "Judgment of Paris" before his brush ever touches the canvas; a Titian pictures in his mind's eye his "Assumption," an Angelo his "Last Judgment," a Raphael his "Transfiguration," a Leonardo da Vinci his "Last Supper"—all before those noble images of Fancy have begun to take definite shape under the inspiration of the master's touch.

For the proper cultivation of Memory of Form, the following plan is recommended:

Let the student take some ordinary object, as a vase, examine it closely and then shut his eyes for a few moments, endeavoring to mentally picture its exact appearance; then let him open his eyes and look at

the object again, to ascertain how nearly correct was his mental conception; he will be almost certain to find some details that he had not noticed before. Let him repeat the process until all the details shall have been accurately imprinted on the mental vision. Then he should take a pencil and paper and make a drawing of the vase, keeping the original out of sight. Upon the drawing being completed a comparison should be made between the two and a new drawing made, in which the errors in the first one are corrected as carefully as can be estimated, and another comparison made with the vase. Let this plan be continued until a reasonably accurate copy of the original can be made. No matter how little experience the student may have previously had in drawing, he will certainly be able after a few trials to correctly copy a simple object, as above. After this the same process should be repeated with a more complex object, and with practice the student will eventually develop an accuracy of observation that he would at first have deemed hardly possible. Finally, after this practice shall have been sufficiently persevered in, the student will be able to reproduce at will, in his mental vision, the minutest details of any object that he has once attentively gazed upon—from a simple block of wood to the most majestic statuary, —from the merest toy to the most imposing and gorgeons edifice. And this will be accomplished, too, almost without conscious effort; the visual memory will have become so thoroughly trained that impressions

will be received and retained by it with but slight exercise of the will power.

Included in Memory of Form is that of Features—the *essence* of the latter being *expression*.

In the animal kingdom, dogs and elephants are especially gifted in the memory of features. Numerous instances are known in which dogs were able to identify their master when the latter was so skilfully disguised as to completely baffle the recognition of his most intimate friends. Elephants have been known to single out and punish, even unto death, persons who had played contemptible tricks on them long before; they have also been known to remember kindnesses and those who performed them, with equal readiness. An interesting instance of the latter kind was related in the *New York Sun* several years ago, of a man named Quinton, who lived in Colombo, Ceylon. On a certain occasion a herd of elephants was in the town and Quinton went to see them. One elephant was tied up with more chains than the others, and Quinton went toward that one, in spite of being warned by the keepers that he was a particularly vicious beast. Quinton put his arm around the elephant's trunk and petted it, the elephant seeming much pleased. He recognized the animal as one that several years previously he had seen injured by a large thorn, which he had dug out with a knife and pair of pincers, the elephant, in spite of the pain, allowing the thorn to be taken out. Quinton identified the beast by the scar, and the elephant recognized his benefactor after all these years.

Vidocq, the famous French detective, possessed such a wonderful memory for faces that after he had once seen a criminal's features he never forgot them, however cleverly they might be disguised. A forger once made his escape from prison and left the country entirely, remaining away for a dozen years. During that period he had become quite bald, and once in a drunken brawl lost an eye and a portion of his nose. Confident of now being so thoroughly disguised that no one could possibly recognize him, he returned to Paris and walked about the streets with the utmost boldness. Shortly afterwards he was arrested as a suspicious character and brought before Vidocq, by whom he was at once recognized as the escaped forger and sent back to prison to serve out the balance of his term.

Perhaps no public man of modern times had a more remarkable memory for faces than Henry Clay, of whose abilities in that regard there are numerous well-attested instances, the following being one of them: During one of his campaigns Clay stopped for a few hours at Clinton, Miss. As soon as his presence became known, a large throng gathered to meet him, among the crowd being a vigorous old man with only one eye, who pressed forward and insisted that the distinguished statesman would surely recognize him. Clay gave the man a keen glance and said: "Where did I meet you before?"

"In Kentucky," was the response.

"Did you lose your eye before or since that time?" the statesman asked.

"Since," the old man replied.

"Turn the side of your face toward me, so that I can see your profile," said Clay.

The man did so. After a brief scrutiny of his profile Clay said: "Weren't you one of the jury that gave me a verdict in the noted case of the United States *versus* Innis, at Frankfort, twenty-one years ago?"

"Yes, sir," said the old man trembling with delight!

"And isn't your name Hardwick?"

"Yes, it is," the man replied, rushing forward and grasping Clay's hand. Then, turning to the wondering crowd, the old man continued:

"Didn't I tell you that he'd remember me? He never forgets a face!"

The celebrated painter, Leonardo da Vinci, invented a most ingenious method for identifying faces, and by it is said to have been able to reproduce from memory any face that he had once carefully scrutinized. He drew all the possible forms of the nose, mouth, chin, eyes, ears, and forehead, numbered them 1, 2, 3, 4, etc., and committed them thoroughly to memory; then, whenever he saw a face that he wished to draw or paint from memory, he noted in his mind that it was chin 4, eyes 2, nose 5, ears 6—or whatever the combination might be—and by retaining the analysis in his memory he could reconstruct the face at any time. Such persons as railway conductors, detectives, hotel clerks and porters, and bank tellers, through the exercise of their particular calling, acquire a memory for faces that seems marvelous—and yet this faculty is rarely

a pure gift of Nature, but is developed through assiduous practice.

Regarding the cultivation of Memory of Features, the following suggestions are offered: Upon first meeting a person whose identification is desired, should he be met in the future, the details of his features should be studied critically, and the color of his eyes and hair noted; also whether he is light or dark, tall or short, thin or corpulent, and what are the peculiarities, if any, in his general appearance.

After these various details shall have become sufficiently impressed on the mind, an association should be formed with surrounding objects, the whole being associated with the time and place and attendant circumstances. The matter of associating the person's *features* with his *name* comes under another branch of memory-culture and will be considered in a subsequent chapter. It is of first importance that the *features* should be remembered: unless this is done the *name* will be of little consequence as a means of recognition.

Closely associated with Memory of Form and also that of Locality, is Memory of Color. The various objects in Nature are far more easily recognized if their *color* has been impressed on the mind than if it has not. The various parts of a figure or the details of a building are more readily retained in the memory if there is a variety of color represented. So, too, with a plan, map or painting; and the fact that a person's eyes are either blue or brown, the hair red or black, enables us to

carry the features in our memory with all the greater ease and certainty.

Color is not only a powerful auxiliary to Sight-Memory—it is indispensable to its thorough cultivation. A well educated memory for Color is not only of great practical use, at times, but it also affords the keenest enjoyment throughout life. The green fields and bright flowers of summer, and the variegated hues of autumn, are both delightful to the eye and refreshing to the spirit. What true poet is not an ardent worshiper at the shrine of Nature, with her incomparable wealth of color, light and shade?—And what real artist does not love to essay on canvas the imitation of the varied tints of nature? Color is indeed useful in bringing out more prominently the particulars of Form, and by its aid the details of Features are surely more deeply impressed on the memory. While there are many to whom the true appreciation of color is a gift, pure and simple, yet there are few who cannot by dint of earnest study become well versed in the memory of color—and it may be truly said that in its cultivation there is no drudgery; while proficiency cannot, it is true, be attained except by practice, yet this practice in its very nature yields naught but satisfaction; it never brings clouds and discontent—it yields only sunshine and delight.

Regarding the proper methods to be pursued in the cultivation of Memory of Color, it is suggested that the student first acquire an intimacy with the appearance and name of each of the colors in common use; and

after this is done let him proceed to gain a like familiarity with the various tints and shades properly belonging to such colors; it will also be interesting and instructive to know by what combination each is produced.

It is important not only that the eye should be so trained that a color, tint or shade may be promptly identified when seen, but also that its *name* should be memorized, as the latter is of material assistance in impressing the former on the memory; by giving anything a *name*, whether it be an object of vision, sound, or thought, we invest it with an *identity* which enables the consciousness to retain it far more faithfully than by any other means.

Of the two hundred or more colors, tints and shades used commercially and in the purposes of art, it is undoubtedly desirable, from an educational point of view, to have an intimate acquaintance with the greater portion, but it will not be necessary to become familiar with more than a respectable minority of them to be reasonably versed in the memory of color.

It is well for the student to make frequent comparisons with each other, of the colors, tints and shades found in nature and art, and to mentally *name* them as they are recognized, that the impressions of them may become more strongly intrenched in the memory; and a familiarity with the laws governing harmony of color will give added interest to such comparisons.

For the convenience of students not conversant with those laws a list of the principal colors and the ones with which they harmonize is herewith appended.

Colors are divided into three Orders—Primary, Secondary, and Tertiary.

The Primary colors are Yellow, Red and Blue.

The Secondary colors are Green, Orange and Purple.

The Tertiary colors are Citrine, Russet and Olive.

Any two of the primary colors mixed in equal proportions produce a perfect secondary color. Thus Yellow and Blue produce Green, Yellow and Red form Orange, and Red and Blue produce Purple. Each of the secondary colors thus produced harmonizes with the remaining primary color.

Any two of the secondary colors mixed in proper proportions produce Tertiary colors. Thus, Green and Orange produce Citrine, Orange and Purple form Russet, and Green and Purple produce Olive.

A proper mixture of either of the three Orders of colors produces Black, whose opposite is White—both of those colors being termed *neutral*.

A disproportionate mixture of either of the three Orders of colors, or of all together, produces Brown.

By mixing the primary colors in varied proportions are produced all *hues* of color. The dilution of these hues with White forms *tints*; or the introduction of Black produces *shades* of color.

As a general proposition the various colors harmonize as follows:

Yellow harmonizes with Red, Purple, Russet, Black, and Brown.

Red harmonizes with Yellow, Green, Russet, Black, and White.

Blue harmonizes with Orange, White, Black, and Brown.

Green harmonizes with Red, Orange, Citrine, and Brown.

Orange harmonizes with Blue, Green, Russet, White, and Brown.

Purple harmonizes with Yellow and Orange.

Citrine harmonizes with Yellow, Orange, Green, and White.

Russet harmonizes with Yellow, Red, Orange, and Brown.

Olive harmonizes with Blue, Green, and Brown.

Black harmonizes with Yellow, Red, Blue, Orange, and White.

White harmonizes with Red, Blue, Orange, Citrine, and Black.

Brown harmonizes with Yellow, Blue, Green, Orange, Russet, and Olive.

CHAPTER X.

FIGURES.

In all the mnemonical systems of any pretension which have appeared since the revival of learning—especially since the time of Feinaigle, nearly a century ago—it seems to have been the uniform assumption that memorizing figures is one of the most difficult of all accomplishments in mnemonics, and that the subject of its cultivation is worthy of the most extended research and thorough elucidation.

The necessity of using figures to express number has been recognized ever since man became a reasoning being, and is a necessity which must continue while civilization lasts, and figures therefore deserve to occupy as important a place in memory culture as words themselves.

Napoleon possessed a wonderful memory, and was perhaps as gifted in that of figures as in any other line; it is said that numbers which he had once seen he never forgot. Herschel could remember all the figures in any of the long and intricate mathematical

computations necessary in his astronomical researches. He frequently worked out a calculation of great length and then dictated the whole to an amanuensis from memory alone. Tycho Brahe, the eminent Danish astronomer, had a marvelous memory for figures. On one occasion, to save himself the inconvenience of referring to the tables of square and cube roots, of which he had to make frequent use, he committed the tables to memory, within four hours. This feat involved the recollection of over 60,000 figures. Euler, the celebrated Swiss mathematician, also had one of the most wonderful memories of its kind known. In his later years he became almost blind, but notwithstanding this misfortune was able to perform the most intricate calculations mentally. He learned the first six powers of all the numbers from one to one hundred, and achieved many other wonderful feats of memory. John Wallis, a great English mathematician, possessed one of the most remarkable memories for figures ever known. He could mentally extract the square root of a number to forty decimal places. While in bed and in the dark, he extracted the cube root of a number consisting of thirty figures.

In 1837 a boy named Bassie, who was only thirteen years of age, gave a series of mnemonical performances in London which excited great interest among mathematicians. Five large sheets of paper covered with closely printed tables and dates, planetary distances, velocities, specific gravities, etc., were distributed among those present, who were requested to ask such

questions as they might wish whose answers were indicated on the sheets—and in every case the correct answer was given. He could repeat long series of numbers in the tables both forward and backward; and to prove that his powers were not confined to the numbers in the tables, he allowed the whole audience to form a long series by each one contributing two or three digits in the order in which they happened to sit. After studying this series for a few minutes he repeated it both forwards and backwards from beginning to end. He could also name the day of the week on which any date had fallen, in any year.

A man named Dase, who was born in 1824, is said to have multiplied together mentally two numbers of a hundred figures each! Another extraordinary calculator was an illiterate boy named Vito Mangiamele, the son of a Sicilian shepherd. He went to Paris in 1839, where on July 3rd of that year MM. Arago, Sturm, and Lacroix, eminent members of the Paris Academy of Science, met to examine this remarkable boy, only ten years of age, whose powers of mental calculation were the wonder of the scientific world. Among other feats he extracted the cube root of 3,796,416 in half a minute, and the tenth root of 282,475,289 in three minutes. The following complicated question was asked him: "What number has the following proportion: That if five times the number be subtracted from the cube plus five times the square of the number, and nine times the square of the number be subtracted from that result the remainder will be 0?" M.

Arago repeated the question a second time, and when he was finishing the last word the boy answered: "The number is 5."

At the time of the great Chicago fire all the books and accounts of the Merchants' Loan and Trust Company were destroyed, and it was thought that the bank would be obliged to go into liquidation on that account. But the cashier, Charles Henrotin, within six weeks, through the exercise of his memory alone, restored the accounts in their entirety, and prepared a new ledger, to the complete satisfaction of both the depositors and directors. In 1896 there was a man employed on one of the Chicago railroads whose duty it was to keep a record of the different cars as they came into the yard. He would step out on the platform as a train approached and make an accurate mental record of the number and position of each car, from the first car to the caboose, however long the train. While doing this he did not hesitate to engage in conversation with any acquaintances who happened to be near him.

Charles Dorr, a bartender at Coakley's Hotel, on Geary street, San Francisco, has a remarkable memory for figures. He knows the exact location of every fire, police-patrol, and telephone box in the city. Give him the name of a street and he will tell the numbers of all the street cars which run on that street. He can tell the location of any house number in the city and the nearest telephone number; he can tell also the number of the badge of any policeman on the force. If a row

of as many as twenty figures is shown him, he will simply glance along the row and a month later can correctly repeat every figure in its order. He is amazingly quick at ordinary mathematical calculations, as multiplying six figures by six figures in a few seconds. His memory seems to hold in a vise-like grip everything that he sees and reads and much that he hears.

And what shall we say of those mathematical enigmas, George Bidder, Jedediah Buxton, and Zerah Colburn, whose performances were still more wonderful? Bidder, at eight, told almost instantaneously the number of farthings in £868 42s 121d, and performed many other feats of a similar character. At ten years of age he could add two rows of twelve figures, giving the answer immediately, and an hour afterwards remember the two rows.

Jedediah Buxton, an illiterate English peasant, could perform the most laborious calculations mentally, and with surprising correctness. His memory for figures was so great that he could begin a computation, and, without finishing it at the time, resume the operation months afterwards at the point where he left off, and complete the calculation. While in a field he was suddenly asked how many cubical eighths of an inch there were in a quadrangular mass 23,145,789 yards long, 2,642,732 yards wide, and 54,965 yards in thickness. He gave the correct answer from his head in a short time. He could step over a tract of land, however irregular its outline, and compute its square con-

tents with almost as much exactness as if it had been measured with a chain and compass. On one occasion he measured a landed estate of irregular shape containing about a thousand acres, simply by pacing around it and then across at various points, after which he made a computation of the square feet comprised in the several subdivisions and added them together. He gave the contents in acres and perches, and then reduced the same to square inches. Subsequently, for his own amusement, he further reduced the contents to square hair's breadths, estimating 2304 to the square inch, being 48 to each side. These calculations were all performed mentally, the final result consisting of fourteen figures! When about fifty years of age Buxton visited London, where he appeared before the Royal Society and was tested as to his arithmetical powers with the most astonishing success, answering every question which he undertook with absolute accuracy.

Zerah Colburn was a still more remarkable arithmetical prodigy than any of those who have been mentioned. He was born in Vermont, just a century later than Buxton (1804). He knew nothing whatever of the rules of arithmetic, nor even how to read or write, until after the performance of the feats in numbers which were the amazement of the scientific world. His extraordinary talents began to be developed when he was only six years of age, and became so conspicuous that his father took him from place to place in the

Eastern States, where the boy's marvelous powers were exhibited to interested audiences, and was subsequently induced to take him to England, where numerous exhibitions were given of the extraordinary gifts of young Colburn, who was then less than eight years of age. For instance, he could determine with the greatest facility the exact number of minutes or seconds in any given period of time. Being asked how many minutes there were in 48 years, he gave the answer, 25,228,800, before the question could be written down—and instantly added that the number of seconds was 1,513,728,000. He was asked to tell the number of seconds in 11 years, and it took him only four seconds to give the solution—346,896,000. He was asked how many days and hours there were in 1811 years; the answer was given in twenty seconds—661,015 days, or 15,864,360 hours. He also gave the number of seconds in 1813 years, 7 months, and 27 days, with corresponding facility. He could also tell almost instantaneously the product of any number consisting of two, three, or four figures, multiplied by a like number of figures; and he could at once give all the factors of any number consisting of six, or seven figures; he could also extract square or cube roots with amazing rapidity and accuracy, and name prime numbers. On one occasion he succeeded in raising the number 8 progressively up to the sixteenth power!—the answer being 281,474,976,710,656. At another time he was asked to give the square root of 106,929; and before the number could be written down he an-

swered 327. He was then requested to extract the cube root of 268,336,125; and with equal facility he answered, 645. He was asked to give the product of 21,734 multiplied by 543—and immediately replied, 11,801,562. He named the squares of 244,999,755 and of 1,224,998,755 with correctness and dispatch, and calculated the cube root of 413,993,348,677 in just five seconds. One of the gentlemen present requested him to name the factors that produced the number 247,483; without hesitation he answered, 941 and 263—which are indeed the only numbers that will produce it. He was then asked to give the factors of 36,083; and at once said that it had none—which is true. The leading French mathematicians had announced the number 4,294,967,297 as a prime number. Young Colburn was asked if he could give its factors; in a few moments he stated that they were 641 and 6,700,417. On another occasion he was asked to name the square of 999,999. He instantly answered; 999,998,000,001. He then further illustrated his powers by multiplying the above sum by 49 and the product by the same number, and the whole by 25! Many other questions of a similar character were propounded to him at various times, and he invariably answered correctly. His calculations were performed with inconceivable rapidity, and yet he was unable to describe the mental process by which he arrived at the results.

The above illustrations show the wonderful power of memorizing figures which has been possessed by per-

sons having peculiar gifts not possessed by ordinary people; they had a *genius* for remembering figures—and genius knows no laws.

It is not to be expected that through any course of training, however arduous, the average individual can succeed in performing feats such as have been above described—nor is it essential that he should; the object of gaining proficiency in the memory of figures is for the educational and practical uses of life—not for the achievement of sensational feats; and it is within the power of every person of ordinary mental capacity to attain proficiency; it is only necessary that the mental energies be rightly directed, and not allowed to wander into uncertain paths, however alluring

The chief difficulty which is commonly considered to attend the memorizing of figures, is the abstractness of their character; nearly all words, except proper names, possess a *meaning*—figures in themselves have none; and as the mind, in contemplating anything either spoken or written, instinctively evades such sounds or words as possess no meaning, but rather, by a sort of natural selection, seeks such ones as *have* a meaning in themselves—so mnemonicians in general, realizing that fact, have attempted to effect a translation of the abstract into the concrete by the use of devices for artificially translating figures into words, their theory being that a word or phrase into which the figures have been thus translated would be more easily recollected than the figures themselves—however lacking in significance the word or phrase might be, and

however remotely it might be related to the fact or idea represented by the figures.

The idea of translating figures into words seems to have originated with Johann Winckelmann about two centuries and a half ago—at least he is the first mnemonician who succeeded in putting the idea into practical shape—and his system has been elaborated from time to time since then by various teachers of mnemonics of more or less note, until the so-called "figure alphabet" has been developed from the crude form in which it first appeared, into a model of theoretical perfection, the artificial relation that it establishes between each numeral and the letter or letters of the alphabet which it represents, being explained on an apparently logical basis.

In recent years the "figure alphabet" has even been virtually made the basis of an entire mnemonical system—the whole reliance for the re-establishment of a date, or any other series of figures, resting upon the theory that some particular word or words (into which the figures in question have been arbitrarily translated by means of the "figure alphabet") may be infallibly recalled to mind through reproducing a chain of association previously established between such word, or words, and other words, however slight or incongruous may be the natural connection between them.

The "figure alphabet," in spite of the state of theoretical perfection to which it has been developed, is not, and never can be, other than a mere curiosity in

mnemonics; it cannot be successfully used in practice, either primarily or as an auxiliary, as a means of memorizing figures; it is a hindrance to memory-development, instead of a help, and the sooner it is permanently rejected, as an essential part of mnemonics, the better for the cause of memory-culture.

By those who have become impressed with the sophistries of the so-called "correlation" theory, the above statement may be received with more or less incredulity—but it is entirely true, nevertheless; and it is furthermore a fact that figures may be retained in the memory with as little difficulty as certain classes of words—notably proper names.

The best way to memorize a number is to note carefully *the relation which the figures forming the number bear to each other*. Let the student make his practice conform to this basic proposition in accordance with the suggestions given in the pages which are to follow, and in a comparatively short time, with reasonable diligence, he will be able to memorize with ease any number consisting of either one, two, three, or four figures, —it seldom being necessary to recollect a number which contains more than four figures; thus the recollection of an historical date, or a house number, or a monetary sum, would in most cases be the only purposes for which even four figures would be required. Distances can usually be indicated with sufficient exactness by three figures and annexed ciphers, whether they be terrestrial or astronomical distances; it is seldom necessary to use more than three figures to rep-

resent heights or depths, measures of weight or capacity, degrees of temperature or of latitude or longitude—and so on; and even should it ever be found necessary to retain in the memory a number consisting of more than four figures, the *principle* by which it may be best memorized remains the same.

It is evident that a number represented by one numeral is the least difficult to recollect, as it consists of a single character, or symbol, as 1, 4, 6, 7, etc.

Next in order of difficulty to retain in the memory are numbers below 100 ending with a cipher, as 10, 20, 30, etc., for there is but one numeral to keep in mind—a cipher not being a numeral—and each succeeding cipher, up to a reasonable limit, adding but little to the task of memorizing.

A number consisting of two figures comes next, the least difficult to recollect of this class being a number in which the first figure is repeated, as 11, 22, 33, etc.

A number ending with a 5 is next, the number being divisible by its terminal figure, which is the middle one of the nine numerals, as 15, 25, 35, etc., and the quotient being always odd.

Next come numbers in which the figures are in progressive order and the number even, as 12, 34, 56, or 78; then a number whose figures are in retrograde order and the number also even, as 98, 76, 54, or 32.

After this are numbers whose second figure is a multiple of the first, as 24, 26, 28, 36, 39 and 48; then numbers whose first figure is a multiple of the second, as 93, 84, 82, 63 and 42.

Next come numbers which are the squares of the various numerals above 3, as 16, 25, 36, 49, 64 and 81; then numbers which are the cubes of the smaller numerals, as 27 and 64.

After this are numbers in which both figures are even, but neither of them a multiple of the other—being the numbers 46, 68, 86 and 64.

The next are numbers in which both figures are odd and not divisible one by the other, but the number not a prime one—being 51 and 57; and lastly, prime numbers between 10 and 100, ending respectively in 1, 3, 7 and 9; being the numbers 31, 41, 61 and 71; 13, 23, 43, 53, 73 and 83; 17, 37, 47, 67 and 97; 19, 29, 59, 79 and 89.

And now we come to numbers of three figures. In such cases it is usually best to begin by memorizing the first figure separately from the others; then to memorize the number formed by the last two figures—carefully noting, in the first place, whether the number formed by the two last figures is a multiple of the first figure; and in the second place, what relation the first figure bears to the second; for instance, whether both figures are identical; whether either one is divisible by the other; whether both are odd, or even, or mixed, or by how much of an interval the two are separated; but in no case should the first and second figures be associated together *as a number*, even though the last figure be a cipher. Sometimes there may be an equal interval between the figures, all being odd, as 159, 357, 975—or even, as 246, 864—or mixed, as

147, 258, 963—or all may be either even or odd, the interval being unequal—as 248, 379, 862, 953, etc.—or the first and last figures may be identical, as 181, 373, 717, 949, etc.—or a number may be the cube of some one of the numerals, as 125, 216, 343, 512, and 729—which are the cubes of 5, 6, 7, 8, and 9. Advantage should be taken of any accidental relationship, such as above illustrated, which may exist among the various figures forming a number, because such features are easily impressed on the memory.

Numbers composed of four figures come next in order of consideration, and while they are more difficult to memorize than lesser numbers, yet a large proportion of the difficulty becomes dissipated when the memorizing is done in a systematic manner. Numbers consisting of four figures should be separated into pairs, each pair being memorized independently of the other, in accordance with the suggestions already given concerning numbers containing two figures, and then an association between each pair of figures should be sought, advantage being taken of any points of similarity or contrariety—such as either pair being divisible by the other pair, as 1442, or 4515; by there being a common factor of each pair, as 2156, or 8154 (the factors being 7 and 9 respectively); by all the figures being either odd or even, as 1397, or 5971; by the two exterior figures being odd and the interior ones even, or *vice versa*, as 7461, or 4918; or the first and third ones odd, or even, and the others the opposite, as 3476, or 7652; or by the first pair being

either odd, or even, and the others *vice versa*, as 7342, or 2659. If it ever becomes necessary to memorize a number consisting of more than four figures, the number should be separated into "threes," beginning at the *right*, the memorizing to commence at the *left*. The first portion of any number should always be memorized first.

For the attainment of a high degree of development in "figure-memory" it is essential that the memory be not only mathematical, but *visual;* in other words, a number which has been memorized should be clearly defined in the *mental vision;* it should seem as if the eye were gazing on the very characters themselves, in all their original distinctness, written, perchance, on some imaginary blackboard, or imprinted in the pages of some imaginary book, or displayed on some sign or poster of the fancy. The power to do this, to one who is deficient in "figure-memory," may seem extremely difficult of attainment, but it can be accomplished by properly directed practice. One of the most effective means of fixing a number in the visual memory is to associate it with some number to which the attention has been frequently directed, and which is thus comparatively easy of recollection. For instance, figures used to represent divisions of time, measures of extension, capacity, weight, money, etc., are more or less familiar; and important historical dates, as well as anniversaries which law or custom has decreed to be worthy of observance, are more than likely to be well impressed on the memory. All

these the novitiate can make use of to excellent advantage until he shall have attained such proficiency in the memory of figures that the employment of these devices is no longer necessary; but until such time numbers which are to be memorized should be associated, whenever possible, with identical numbers which are familiar, for the purpose of strengthening the impression.

The following illustrations, as suggestive of this idea, may be of interest, the significant figures being in *italics:*

2 may be memorized by reflecting that we have two hands, two feet, two eyes, two ears: that there are two pints in a quart: that two cents represents U. S. letter-postage.

To memorize *3*, it is only necessary to associate it with either of the following facts: there are 3 feet in a yard, 3 scruples in a drachm, 3 sides to a triangle, 3 colors in the national flag; there were 3 Graces in Grecian Mythology.

As to *4:* There are 4 quarts in a gallon, 4 pecks in a bushel, 4 weeks in a month, 4 farthings in a penny, 4 sides to a building, 4 suits in a pack of playing-cards; July 4 is Independence Day, and March 4 Presidential-inauguration day.

There are *5* fingers on each hand, 5 points to a star; 5 represents a coin in general circulation.

A cube has *6* sides. There are 6 feet in a fathom.

There are 7 days in a week; there were 7 wonders of the ancient world.

8 quarts make a peck, 8 drachms an ounce, 8 furlongs a mile. There are 8 planets.

9 square feet make a square yard; there are 9 numerals; in Grecian Mythology there were 9 Muses. Lincoln and Gladstone were born in 1809. 9 is the square of 3.

There are *10* fingers on both hands; 10 represents a coin in common circulation. There are 10 Commandments.

In 18*11* Thackeray was born. In the same year occurred the Massacre of the Mamelukes. 11 is the first prime number of two figures.

There are *12* inches in a foot; 12 ounces in a pound (Troy), 12 pence in a shilling, 12 things in a dozen, 12 signs of the zodiac, 12 semi-tones in an octave. February 12 is Lincoln's birthday. In 18*12* Dickens and Browning were born, Moscow was burned, the second war with England commenced.

There are *13* weeks in a "quarter," or season; the national flag has 13 stripes. There are 13 cards in each suit, in a pack of playing cards. 13 is a "baker's" dozen. 13 at table is unlucky, according to an old superstition. Wagner was born in 18*13*.

There are *14* pounds in a stone. February 14 is St. Valentine's day. Bismarck was born in 18*14*.

15 may be associated with the battles of Waterloo and New Orleans, which occurred in 18*15*. A quarter of an hour is 15 minutes.

There are *16* drachms in an ounce, and 16 ounces in a pound. 16 is the square of 4.

March *17* is St. Patrick's day.

18 constitutes the first two figures of the nineteenth century. In 16*18* the Thirty years' war began. In 18*18* Gounod was born.

19 forms the first two figures of the twentieth century. In 18*19* Ruskin and Lowell were born.

There are *20* shillings in a pound sterling; 20 things make a score. 20 represents the largest U. S. gold coin. In 16*20* the Mayflower landed.

There are *21* shillings in a guinea. A youth attains his majority at 21. In 18*21* Napoleon died at St. Helena. In 15*21* Cortez conquered Mexico.

Feb. *22* is Washington's birthday. Gen. Grant was born in 1822.

Pliny the Elder was born in the year *23*; Pascal in 1623; Max Müller in 1823.

There are *24* hours in a day. Palestrina was born in 1524.

25 represents a silver coin in common circulation. Dec. 25 is Christmas. The circumference of the earth is 25,000 miles. 25 is the square of its last figure.

26 is the number of weeks in a half year.

There are *27* cubic feet in a cubic yard. A lunar month is 27 days.

The shortest month in the year (February) consists of *28* days. Bunyan was born in 1628.

In February of leap-year there are *29* days. The highest mountain in the word (Mt. Everest) is *29*,000 feet high.

A commercial month is *30* days. A half-hour is 30 minutes. May 30 is Decoration Day.

The longest month has *31* days. Dryden was born in 163*1* and Cowper in 173*1*.

Water freezes at *32*° Fahrenheit. Washington was born in 173*2*. Pizarro conquered Peru in 153*2*.

33 years is termed a "generation." In 153*3* Queen Elizabeth was born.

In 183*4* Spurgeon was born.

In 163*5* the French Academy was founded. In 183*5* Samuel L. Clemens (Mark Twain) was born.

In 163*6* Harvard College was founded. 36 is the square of its last figure.

In *37* Josephus was born. In 173*7* Gibbon was born. In 183*7* Phonography was invented. In the same year Victoria ascended the throne of England.

In 173*8* Herschel was born.

In *39* Lucan was born; in 163*9* Racine; in 183*9* Bret Harte.

In *40* Titus was born. In 134*0* Chaucer was born.

In 174*1* Lavater was born. In 184*1* the Prince of Wales was born.

In 164*2* Newton was born. In 174*2* Blücher was born.

In 164*3* the barometer was invented.

In 154*4* Tasso was born. In 184*4* Sir Arthur Sullivan was born.

In 184*5* occurred the war with Mexico. Three-quarters of an hour is 45 minutes.

In 174*6* occurred the battle of Culloden. Kosciusco was born the same year.

In *47* Juvenal was born; in 154*7* Cervantes; in 184*7* Edison. In 184*7* the sewing machine was invented.

In 1848 the German Empire was established.

In 1749 Goethe was born. 49 is the square of 7.

50 is a half-century; it also represents a coin in common circulation. In 1250 gunpowder was invented.

In 1551 Camden was born (it reads backwards and forwards the same). In 1851 the first World's Fair was held, at London.

There are 52 weeks in a year; 52 cards in a pack of playing cards.

In 53 Trajan was born. In 1753 the British Museum was founded.

In 1854 occurred the Crimean war.

In 55 Tacitus was born; in 1755 Hahnemann was born. In 1455 the War of the "Roses" began.

In 1756 Mozart was born. The Seven Years' War began in that year.

In 1457 the first newspaper was printed. In 1757 Lafayette and Hamilton were born. In 1857 occurred a great financial panic (U. S.).

In 1758 Lord Nelson was born. In 1858 was laid the first Atlantic cable.

In 1759 Pitt, Burns and Schiller were born. In 1859 occurred the Harper's Ferry insurrection.

There are 60 seconds in a minute, 60 minutes in an hour, and 60 minutes in a degree of latitude or longitude.

In addition to the foregoing "memory-pegs," there is the number formed by the last two figures of the year of a person's birth, and the day of the month; the whole or a portion of his house, office and telephone number,

and the number of his postoffice box; also the numbers in a safe-lock combination.

The foregoing illustrations of ways in which figures may be associated with each other do not include all that may or will be mentioned, as additional illustrations will be given in the next chapter; but enough have been given so that any person of ordinary intelligence can, by proper application, attain a degree of proficiency in the art of memorizing figures far beyond what he could ever have hoped for through the usual methods—or rather lack of method. As his practice continues, additional ways of associating figures with each other will suggest themselves to his mind, until he will soon be able to memorize any number consisting of four figures with ease—and even greater tasks may be undertaken without hesitation. It will become evident to the student, after sufficient trial, that this method of memorizing numbers by noticing the relation which the figures composing a number bear to each other, is vastly superior to the cumbersome and impracticable method of "translating" figures into words—and that the natural and logical way of memorizing figures is to associate them with each other and not with words. As practice by this method continues, the difficulty of memorizing figures will be greatly lessened; tasks which at first may seem impossible to accomplish will be conquered with ease, and any number or date, with the fact or event which it represents, will become impressed on the memory in vivid and enduring characters.

CHAPTER XI.

HISTORICAL DATES.

Assuming that the student has put to practical use the methods advised in the preceding chapter, and has thereby attained at least moderate proficiency in the memory of figures, the subject of historical dates will now be introduced, the main purpose being to indicate how the significant dates in history may be memorized with an expenditure of time and mental energy but slight compared with that required by the ways ordinarily employed; the secondary purpose being to suggest how may best be retained in the memory the dates of occurrences in a person's own experience which are of more than passing moment. In both cases the result is accomplished chiefly through the medium of Association, for whose intelligent employment Historical Dates furnishes an ample field; and to the systematic arrangement of those dates so that any of them may be easily and effectually preserved in the memory, will this chapter be mainly devoted.

The exceeding readiness with which an historical date commonly deserts the memory is only too fully

realized by every reader of history who is not especially gifted in "figure-memory." The *event* to which the date is related may long cling to the recollection—perhaps may never leave it—but the *date* is likely to soon fade away, and the more remote the event the more doubtful that its date will be retained in the memory—even the century itself may be forgotten if long prior to our own age. And yet, however faithfully the *details* of historical events may be imprinted on the memory, it is scarcely less important that their *dates* be preserved also—for thus is better assured the retention of the *sequence* of events, whose recollection is indispensable to the accurate knowledge of history.

The ability to recall at will events of past ages which historians have deemed worthy of record cannot but be a source of untold gratification in after years—and yet how few there are who, unless fresh from the college or university, or who have taken the time to occasionally review their historical knowledge, retain with fidelity more than a fragment of the details of history with which they were once familiar—and especially the *dates*. It seems to be the common experience that, as time passes on and the mind becomes more and more engrossed with worldly matters, only the nucleii of history remain intact in the memory, the *dates* leaving the least permanent impressions of all. There are events, it is true, whose dates the memory retains because of the oft-repeated allusions in literature to those events, through the very frequency of which reference the events and their dates become so

thoroughly imprinted upon the memory that they serve as landmarks, with which may be associated scenes and incidents of the past that would otherwise soon fade away. No student of ancient history forgets the date of Marathon (B. C. 490), nor that a decade later Leonidas and his brave Spartans sacrificed their lives at the pass of Thermopylæ; that Themistocles gained the great battle of Salamis in the same year; and that Gelon of Syracuse defeated the Carthaginians on the same day that the battle of Salamis was fought. Other dates generally remembered are: B. C. 413—the date of the battle of Syracuse, when began the decline of Athens; B. C. 331, when Alexander the Great gained the great battle of Arbela, which decided the fate of the Eastern world for a long period; B. C. 216, the date of the battle of Cannæ, won by Hannibal over the Romans; B. C. 146, when Carthage was taken and destroyed by Scipio; B. C. 44 and the assassination of Cæsar; B. C. 31 and the battle of Actium and deaths of Antony and Cleopatra; A. D. 79 and the destruction of Pompeii and Herculaneum by the relentless fires of Vesuvius; 410 and the sack of Rome by Alaric; 451 and the defeat of Attila and the Huns at Chalons.

The student of religious history will always remember 325 as the date of the first Ecumenical Council at Nice, 1095 as that of the first Crusade, 1517 as the date of the Reformation, 1598 as that of the Edict of Nantes, and 1685 as the date of its revocation.

The student of musical history thinks of 750 as the date when the organ was invented, 1025 as that when

modern musical notation was devised, and that five hundred years later Palestrina, the Father of modern music, was born. He remembers 1685 as the year when Bach and Handel were born, 1732 as the year of Haydn's birth, 1756 of Mozart's, 1770 as that of Beethoven's, 1809 of Mendelssohn's, and 1813 as that of Wagner's.

What Frenchman does not remember 742 as the year of Charlemagne's birth, and 1431 as the year when Joan of Arc suffered martyrdom, and when Richelieu was born?—And 1789—what a world of suggestiveness in that date!—the horrors of the French Revolution!—the "Reign of Terror!"—Robespierre—Marat—Charlotte Corday!—Then Napoleon—Marengo in 1800; Austerlitz in 1805; Friedland in 1807. Then his downfall,—Moscow in 1812; Waterloo in 1815!

To the Briton how significant are 1066 and William the Conqueror—1215 and Magna Charta—1588 and the "Armada?" 1666 he thinks of as the year of the Great Fire in London, and the year before as that of the Plague; 1759 suggests Quebec, and Wolfe; 1805 Trafalgar, and Nelson; 1815 Waterloo, and Wellington; and 1854 the Crimean War. And what American ever forgets the significance of 1492, 1620, 1776, 1812 and 1861?—and that 1732 ushered into life the immortal Washington?

But the foregoing dates represent only the merest fraction of the world's events which are accorded historical mention; and if those dates are so replete with meaning, what of the chief *actors* in the events to which the dates of history relate? The date of a great battle

may suggest only that one event; the date of a great man's birth is likely to recall to mind the chief acts of his life. If B. C. 331 suggests Arbela, one of the decisive battles of the world, should not the year in which Alexander was born be still more significant? The battle of Cannæ was fought in 216 B. C.; should that date be as impressive as 247 B. C., the year in which Hannibal was born? Surely 100 B. C., the year of Cæsar's birth, is of far greater significance to the mind than the date of any particular battle which he won; and 742 may well commemorate many a triumph of Charlemagne. Do not 1496 and 1594, respectively, suggest Gustavus Vasa and Gustavus Adolphus, and their achievements? and what does 1599 mean but Cromwell and his notable career? What date should remind us more forcibly of the Crusades than 1137, the year of Saladin's birth? What does 1336 mean but Tamerlane, the great Tartar chieftain, and his wonderful conquests?

In the early part of the eighteenth century we have 1712 to remind us of Frederick the Great. And a score of years later—what a world of significance in that date! It means Lexington, and Yorktown, and all the intervening years of hopes and fears, of privation, of bloodshed—culminating in American Independence.

What date can better revive the memory of Napoleon than the year of his birth, 1769? Does it not suggest Valmy, and Marengo, and Jena, and Wagram, and Friedland, and Austerlitz?

The closing year of the eighteenth century means Von Moltke, the peerless strategist—"silent in seven

languages." It means Sadowa, and Metz, and Mars-la-tour, and Gravelotte, and Sedan! And 1822—what does that mean but Grant, the "silent," the never-defeated! It signifies, indeed, the whole history of a war!

And the triumphs of the pen. Of what special significance is the exact year in which a great work is produced? The same person may write many books, and what is there in the date of any one of them which is likely to recall that of another? and what matters it that one work was produced before or after another? Is it essential to know whether *Romeo and Juliet* was written before *Hamlet*, or *Richard III.* before *Macbeth?* What matters it whether *Kenilworth* or *Ivanhoe* was written first? *David Copperfield*, or *Pickwick? Childe Harold*, or the *Corsair?* In memorizing a date associated with the name of a great writer, of how much lesser importance is the date representing a single product of the pen than the year in which he was born who wielded the pen!

The fact is that to the student of history it is of more importance to know the date on which a great man was born than the date of any particular action which he performed or in which he was prominent, for thus will be best retained in memory the leading acts of his life in their order of occurrence.

It may be contended that the date by which a great man should be best remembered is that representing the zenith of his activity; but it is seldom possible to establish such a date that will be commonly accepted, especially if his career has extended over a long time.

Neither should the date of a person's death be used as a basis of recollection; we do not commemorate a man's *death*, but his *birth;* we celebrate the *dawn* of an illustrious life—not its fading away.

It is true that the memory, in addition to whatever dates of the births of great men it may store away, should not neglect to preserve the dates of the great events of history—but those events are few compared with the aggregate of events worthy to be recorded in the memory; yet of historical dates the most important ones are virtually all which are ordinarily retained in the memory with any degree of permanence—and that because they have been impressed upon it by sheer repetition—nothing else; had there been used to the best advantage an amount of time and mental energy equal to that employed in the memorizing of those dates, a vastly greater number would have been stored away, and their retention in the memory rendered far more certain.

The following examples will illustrate the great advantage of *system* in memorizing historical dates. Suppose we want to recollect the year of Herodotus' birth—484 B. C. The date reads forward and backward the same, the middle figure being equal to the sum of the end figures. One thousand years later (516 A. D.) the Knights of the Round Table were organized. Aristotle, the greatest of philosophers, and Demosthenes, the most celebrated of orators, were both born in the year 384 B. C., 100 years after the birth of Herodotus.

The year of birth of Æschylus, the founder of the drama, is 525 B. C. That date may be recalled by knowing that Æschylus was born 2,000 years before Michael Angelo, and that the latter's birth occurred in 1475—300 years before the American Revolution. The date 525 reads forward and backward the same, the number formed by the two last figures being the square of the first figure. Besides, the number formed by the two first figures corresponds with the number of weeks in a year. Antisthenes, a famous Greek philosopher, was born a century later than Æschylus (in 425 B. C.), which was 1,000 years before the birth of Heraclius, Emperor of the East (575 A. D.), which last date reads forward and backward the same.

If we wish to recollect when Canute was born, let us bear in mind that it was 100 years before the first Crusade (1095), and the same period after the birth of Athelstane (895), one of the great Old-English Kings.

The date when Egbert, the first King of England, was born, can be easily associated with the American Revolution, as it occurred just 1000 years before (775). So may the date of Kepler's birth be linked to that of Mohammed's, as it was 1000 years afterward (1571).

We will next try to memorize the dates when Saladin, the great Moslem commander, and Tamerlane, the renowned Tartar conqueror, were born. The year of Saladin's birth is 1137. Let it be noticed that each single figure is a prime number, and that every two of those figures make prime numbers—11, 13, 37, 17, 31, 73, 71. The square of the first half of the date (11) is

121, the year of the Roman emperor Marcus Antoninus' birth, and it reads forward and backward the same. The square of the last half of the date (37) is 1369, the year when John Huss was born, and also when the Bastile was founded. The last three figures are regular intervals apart, each of the two last figures being divisible by the first one. Had Saladin's birth occurred a year earlier it would have been just two hundred years before that of Tamerlane (1336), who was born 300 years before Harvard University was founded (1636). The French Academy was founded in the previous year, and Cambridge University 1000 years earlier (635).

Let us suppose that it is desired to recall the year in which occurred the birth of Hardicanute, the Danish King of England (1018). The last two figures are the same as the first two figures of any year in the nineteenth century; we also find that a century later (1118) Thomas à Becket was born, and that the Order of Knights Templars was also founded in that year. 1118 is a date easily retained in the memory, as it is an "eight" preceded by three "ones." If we add to this date a number equal to the number of days in a year, we will have the date when Luther, Raphael and Baber were born (1483).

If we wish to recollect the date of Ruben's birth (1577), we may associate it with that of Titian's, which was a century earlier, in the same year that watches and violins were invented (1477). It may also be noted that Titian died in the year before that of Ruben's birth, having lived to the age of 99.

The Russian serfs were emancipated in the same year that the U. S. Civil War began (1861). The date when the Russian Empire was founded (862) may be recalled by the fact that had the first named event occurred a year later, the interval between the two events would have been just 1000 years.

We may be reminded of when the battle of Trafalgar was fought by knowing that it happened 200 years after the "Gunpowder Plot" (1605); and when Carthage was destroyed by recalling to mind that it was 2000 years prior to the Crimean war, it being in 146 B. C.

It is an easy matter to recollect the dates when were born the distinguished naturalists, Linnæus, Buffon, and Agassiz, when we reflect that the two former persons were born in the same year (1707), and the latter a century later, in the year in which Fulton took his first steamboat trip on the Hudson, and when slavery was abolished in Great Britain (1807).

How can we better recall the date of Shelley's birth than by associating it with the discovery of America, which was 300 years before?—the date of Jenny Lind's birth than by recollecting that it happened 200 years after the landing of the Mayflower?—or that Dickens was born in the same year that our second war with England began (1812)?

Many other illustrations of a character similar to the above might be given, but these are enough to show the great value of Association as an aid in memorizing historical dates. It has a value which cannot

be properly appreciated if viewed from the ordinary standpoint as applied to Association, for the connection of dates with each other is by a process different from any other form of association—and yet it is no less effective if notice be taken of the features peculiar to any date, so as to form for the date a proper association.

As was said in the beginning of this chapter, it will be assumed that the student has attained at least moderate proficiency in associating figures with each other. That alone might be sufficient for memorizing historical dates; but as an additional means of impressing them on the memory it is proposed in the pages that are to follow to link together the leading events of history in a systematic manner. In the arrangement of those dates (where the association is based on the comparison of one date with another, rather than on any features peculiar to the figures forming a single date taken by itself), care has been taken to connect with each other, as far as possible, events of a like nature; thus dates representing births of noted men are generally associated with each other, and a like plan pursued regarding events affecting the welfare of nations, so as to avoid the confusion which might sometimes result from linking active with passive events. It is by no means claimed that *all* the important events of history are comprised in these lists; it is believed, however, that the greater part of them are so embraced, and that there is included the name of nearly every distinguished person that ever

lived (except Biblical characters), from the dawn of history down to the present age—being nearly 1700 names.

It is not to be assumed that the intelligent study of history can be accomplished by arbitrarily committing these lists to memory; they are not inserted with that purpose in view, but to provide "memory-pegs" on which may be hung such historical memorandums as are desired, from time to time, and arranged so that they may be referred to by the memory at will; a single reference may recall a whole chain of events which otherwise might never have reappeared in the recollection. By this method the capacity of the memory for preserving dates can be immeasurably augmented, and the secret of it all is—the association of figures *with each other*.

For the convenience of the student, an index of the events associated is furnished at the end of this chapter, the list being divided into two classes: One class being the noted characters of history, and the other, important historical events. A list of the different dates used, in their chronological order, is also given.

A few dates—notably the more remote ones—are involved in doubt, as authorities do not agree; but the dates given in those cases are believed to be within a very few years. If all but absolutely authentic dates were rejected, it would be necessary to omit from the list many of the most distinguished characters of ancient history—such as Homer, Hesiod, Lycurgus,

Solon, Draco, Pythagoras, Berosus, Sappho, Thales, Mencius and many others—and some moderns also.

In arranging these lists the plan has been adopted of beginning with the dates which are believed to be the most easy to memorize, and advancing gradually to those which are the least so. The first list consists of dates which terminate the centuries, from remote ages down to the close of the eighteenth century. There are only two figures to memorize, at the most, and in about half the cases only one.

The list is as follows:

B. C. 700: Terpander .....born.
B. C. 600: Pherecydes .....born.
B. C. 500: Anaxagoras .....born.
B. C. 300: Cleanthes, Lycon .....born.
B. C. 100: Cæsar .....born.
A. D. 200: Cyprian .....born.
600: Dagobert I.....born.
1000: Ferdinand the Great.....born.
1100: Geoffrey of Monmouth.....born.
1300: Hafiz .....born.
1400: Gutenberg, Diamante .....born.
1500: Cellini, Martyr, Camerarius, Charles V. .....born.
1600: Calderon, Lorraine, Prynne.....born.
1700: Zinzendorf, Stradivarius, Cruden, James Thomson .....born.
1800: Macaulay, Bancroft, Heine, Fliedner, Lassen, Lieber, Plattner, Von Moltke, John Brown.....born.

The next dates selected are those which read backward and forward the same, either the two first or two last figures being the only ones necessary to memorize.

The list is as follows:

B. C. 878: Carthage founded.
B. C. 606: Anaximenes ....born.
B. C. 535: Heraclitus .....born.
B. C. 535: Thespis first exhibited Tragedy.
B. C. 525: Cambyses conquered Egypt.
B. C. 525: Æschylus .....born.
B. C. 484: Herodotus .....born.
B. C. 454: Timotheus .....born.
B. C. 454: Athens subdued Ægina.
B. C. 404: Fall of Athens.
B. C. 383: Battle of Mantineia.
B. C. 343: First Samnite war began.
B. C. 323: Euclid .....born.
B. C. 252: Philopœmen .....born.
B. C. 212: Romans captured Syracuse.
B. C. 202: Battle of Zama.
B. C. 151: Agatharcides .....born.
B. C. 131: Sisenna .....born.
B. C. 121: Mithridates .....born.
A. D. 55: Tacitus .....born.
121: Marcus Antoninus .....born.
121: Hadrian's Wall built.
393: Olympian games abolished.
434: Odoacer .....born.

A. D. 454: Theodoric .....born.
505: Belisarius .....born.
575: Heraclius .....born.
636: Mosque of Omar founded.
656: Aldhelm .....born.
878: Battle of Ethandune.
939: Hugh Capet .....born.
1111: Andronicus .....born.
1221: Bonaventura .....born.
1331: Cannon first used.
1441: Printing invented.
1551: Camden .....born.
1661: Rollin, De Foe.....born.
1771: Scott, Sydney Smith.....born.
1881: Volapük introduced.

In the following list of dates the three right-hand figures consist of one numeral repeated twice, which is prefixed by the lowest numeral.

A. D. 1222: Padua University founded.
1333: Battle of Halidon Hill.
1444: African slave trade began.
1555: Carracci .....born.
1666: Geminiani, Vanbrugh, Wotton.....born.
1777: Campbell, Clay, Gauss, La Motte, Oersted, Fouqué .....born.
1888: William II. ascended German throne.

The next list consists of dates above 1000 in which both pairs of figures in a date are identical.

A. D. 1212: Children's Crusade.
1313: Boccaccio, Rienzi .....born.
1414: Treaty of Arras.
1515: Ascham, Tallis, Neri, St. Theresa....born.
1616: John Owen, Antoinette, Bourignon..born.
1717: D'Alembert, Winckelmann, Michaelis, Maria Theresa.....born.
1818: Gounod, Froude, Northcote, Tourguenieff .....born.

In the following list each pair of figures advances in order.

A. D. 1011: Danes invaded England.
1112: War, Henry I. and Earl of Anjou.
1213: Battle of Muret.
1314: Battle of Bannockburn.
1415: Battle of Agincourt.
1516: First Postoffice.
1617: Cudworth .....born.
1718: Brainerd, Horace Walpole.....born.
1819: Ruskin, Lowell, Kingsley, Abt, Offenbach, George Eliot, Elias Howe, Queen Victoria .....born.

The following list consists of dates in which the two pairs of figures in each of the dates, except the last, in the preceding list, are interchanged.

A. D. 1110: Henry V. invaded Italy.
1211: Ibn Khallikan .....born.

A. D. 1312: University of Orleans founded.
1413: Stenography invented.
1514: Battle of Kalderoon.
1615: Baxter, Denham, Salvator Rosa.....born.
1716: Garrick, Gray, Barthélemy.....born.
1817: Armitage, Thoreau, Lotze.....born.

Let us now take as a starting point the date of the Great London Fire (which can be easily retained in the memory, as one figure occurs three times—1666), and note some of the most important events which happened each 100 years prior to that date, back to the time of the Norman conquest, and also the most notable events that occurred each 100 years since 1666.

A. D. 1066: Battle of Hastings.
1166: Alfonso of Portugal captured Evora.
1266: Charles of Anjou conquered Sicily.
1366: Battle of Najara.
1466: Colet, Matsys, Aquila, Aventinus, Doria, Lilye .....born.
1566: Alleyn, Richard Boyle.....born.
1666: Great Fire of London.
1766: Malthus, Wollaston, Madame de Stael, Ersch, Dalton, Alex. Wilson, Lady Nairne.....born.
1866: Battle of Sadowa.

The Great Plague in London occurred in the year previous to the Great Fire. Let us note the important events, by centuries, in the same manner as before.

A. D. 1065: Westminster Abbey consecrated.
1165: William the Lion.....born.
1265: House of Commons founded.
1365: Vienna University founded.
1465: Budapest University founded.
1565: Tassoni, Argensola .....born.
1665: Great Plague of London.
1765: Mackintosh, Karamzin, Baggasen, Bagration, Baader, Robert Fulton .....born.
1865: Slavery abolished in the United States.

The next list will represent events which occurred at identical dates before and after the beginning of the Christian era.

B. C. 15: Germanicus .....born.
A. D. 15: Vitellius .....born.

B. C. 42: Tiberius .....born.
A. D. 42: Britannicus .....born.

B. C. 43: Ovid .....born.
A. D. 43: Martialis .....born.

B. C. 50: Propertius .....born.
A. D. 50: Plutarch .....born.

B. C. 69: Gallus, Cleopatra .....born.
A. D. 69: Polycarp .....born.

B. C. 76: Asinius Pollio .....born.
A. D. 76: Hadrian .....born.

B. C. 86: Sallust .....born.
A. D. 86: Antoninus Pius .....born.

B. C. 86: Sulla captures Athens.
A. D. 86: Dacian war begins.

B. C. 106: Pompey, Cicero .....born.
A. D. 106: Justin .....born.

B. C. 121: Mithridates .....born.
A. D. 121: Marcus Antoninus .....born.

B. C. 131: Sisenna .....born.
A. D. 131: Irenæus .....born.

B. C. 140: Crassus .....born.
A. D. 140: Athenagoras .....born.

B. C. 185: Terence, Scipio Africanus.....born.
A. D. 185: Origen .....born.

B. C. 188: Gracchus .....born.
A. D. 188: Caracalla .....born.

B. C. 205: Æmilius .....born.
A. D. 205: Plotinus .....born.

B. C. 210: Polybius .....born.
A. D. 210: Longinus .....born.

B. C. 213: Carneades .....born.
A. D. 213: Valerian .....born.

B. C. 214: Great Wall of China begun.
A. D. 214: Grist mills invented.

B. C. 216: Battle of Cannæ.
A. D. 216: Artabanus invaded Syria.

B. C. 219: Pacuvius .....born.
A. D. 219: Philiscus .....born.

B. C. 234: Cato Major .....born.
A. D. 234: Porphyrius .....born.

B. C. 245: Hermippus .....born.
A. D. 245: Diocletian .....born.

B. C. 252: Philopœmen .....born.
A. D. 252: Antony the Monk.....born.

B. C. 265: Nævius .....born.
A. D. 265: Eusebius .....born.

B. C. 287: Archimedes .....born.
A. D. 287: Hilary of Poitiers.....born.

B. C. 304: Berosus .....born.
A. D. 304: St. Epiphanius.....born.

B. C. 310: Theocritus .....born.
A. D. 310: Ausonius .....born.

B. C. 316: Arcesilaus .....born.
A. D. 316: Libanius, St. Martin.....born.

B. C. 341: Epicurus .....born.
A. D. 341: St. Jerome .....born.

B. C. 350: Zeno .....born.
A. D. 350: Hypatia .....born.

B. C. 354: Cassander .....born.
A. D. 354: St. Augustine.....born.

B. C. 359: Philemon .....born.
A. D. 359: Stilicho .....born.

B. C. 360: Protogenes .....born.
A. D. 360: Cassianus .....born.

B. C. 384: Aristotle, Demosthenes.....born.
A. D. 384: Honorius .....born.

B. C. 389: Æschines .....born.
A. D. 389: Theodoret .....born.

B. C. 396: Xenocrates, Hyperides.....born.
A. D. 396: St. Patrick.....born.

B. C. 399: Eudoxus .....born.
A. D. 399: Aetius .....born.

B. C. 406: Speusippus .....born.
A. D. 406: Attila, Genseric.....born.

B. C. 410: Alcibiades defeated Roman fleet.
A. D. 410: Romans evacuated Britain.

B. C. 412: Diogenes .....born.
A. D. 412: Proclus .....born.

B. C. 422: Epaminondas .....born.
A. D. 422: St. Genevieve.....born.

B. C. 430: Dionysius, Xenophon.....born.
A. D. 430: Apollinaris Sidonius.....born.

B. C. 438: Lysias .....born.
A. D. 438: Remigius .....born.

B. C. 451: First Roman Decemvirate.
A. D. 451: Battle of Chalons.

B. C. 454: Timotheus .....born.
A. D. 454: Theodoric .....born.

B. C. 466: Andocides .....born.
A. D. 466: Clovis .....born.

B. C. 468: Socrates .....born.
A. D. 468: Cassiodorus .....born.

B. C. 480: Euripides, Antiphon, Philolaus.....born.
A. D. 480: Narses .....born.

B. C. 481: Agesilaus .....born.
A. D. 481: St. Benedict .....born.

B. C. 483: Ion .....born.
A. D. 483: Justinian the Great.....born.

B. C. 490: Empedocles .....born.
A. D. 490: St. David.....born.

B. C. 544: Ageladas .....born.
A. D. 544: Gregory of Tours.....born.

B. C. 550: Hecatæus .....born.
A. D. 550: Columbanus .....born.

B. C. 550: Nebuchadnezzar invaded Egypt.
A. D. 550: Slavs and Huns invaded Rome.

B. C. 570: Theognis .....born.
A. D. 570: Isidorus .....born.

B. C. 695: Alcman .....born.
A. D. 695: Damascenus .....born.

B. C. 887: Parchment invented.
A. D. 887: Books invented.

B. C. 892: Hesiod .....born.
A. D. 892: Saadia .....born.

B. C. 912: Lycurgus .....born.
A. D. 912: Otto the Great.....born.

B. C. 995: Homer .....born.
A. D. 995: King Canute.....born:

B. C. 1095: First dictionary compiled. (Chinese.)
A. D. 1095: First Crusade.

B. C. 1106: Mycenæ conquered.
A. D. 1106: Normandy conquered.

B. C. 1329: Achaia founded.
A. D. 1329: Ottoman Empire founded.

B. C. 1453: Olympian games originated.
A. D. 1453: Turks captured Constantinople.

B. C. 1492: Thebes founded.
A. D. 1492: Columbus discovered America.

B. C. 1506: Flute invented.
A. D. 1506: St. Peter's Church commenced.

B. C. 1854: Kingdom of Argos founded.
A. D. 1854: Crimean War.

The next list is of the same character as the preceding one, except that 1000 years is added to all dates since the beginning of the Christian era.

B. C. 25: Pantheon built.
A. D. 1025: Musical notation invented.

B. C. 55: Romans first invaded Britain.
A. D. 1055: Battle of Vaccoli.

B. C. 155: Marius .....born.
A. D. 1155: Saxo Grammaticus.....born.

B. C. 190: Romans first invaded Asia.
A. D. 1190: Tancred conquered Apulia.

B. C. 228: Flamininus, Acilius.....born.
A. D. 1228: Voragine .....born.

B. C. 270: Fabius, Plautus.....born.
A. D. 1270: Wallace, Cino.....born.

B. C. 276: Eratosthenes .....born.
A. D. 1276: Giotto .....born.

B. C. 280: Chrysippus .....born.
A. D. 1280: William of Occam.....born.

B. C. 280: Battle of Heraclea.
A. D. 1280: Moguls conquered China.

B. C. 283: Livius Andronicus .....born.
A. D. 1283: Martino .....born.

B. C. 284: Alexandrian Library founded.
A. D. 1284: Kingdom of Navarre fell.

B. C. 290: Manetho .....born.
A. D. 1290: Tauler .....born.

B. C. 312: Appian Way commenced.
A. D. 1312: Orleans University founded.

B. C. 372: Mencius .....born.
A. D. 1372: Foscari .....born.

B. C. 377: Theopompus .....born.
A. D. 1377: Brunelleschi.....born.

B. C. 381: Heraclides .....born.
A. D. 1381: Chartier .....born.

B. C. 383: Battle of Mantineia.
A. D. 1383: Tamelane conquered Turkistan.

B. C. 402: Phocion .....born.
A. D. 1402: Masaccio, Dunois.....born.

B. C. 405: Agrigentum destroyed.
A. D. 1405: Venetians conquered Padua and Verona.

B. C. 413: Battle of Syracuse.
A. D. 1413: Ladislas plundered Rome.

B. C. 420: Isæus .....born.
A. D. 1420: Torquemada, John Wessel, Gozzoli..born.

B. C. 422: Epaminondas .....born.
A. D. 1422: Caxton, Baldovinetti.....born.

B. C. 443: Parthenon begun.
A. D. 1443: Eton College founded.

B. C. 445: Eupolis .....born.
A. D. 1445: Comines, Eberhard.....born.

B. C. 447: Battle of Coronea.
A. D. 1447: Vatican Library founded.

B. C. 448: Aristophanes .....born.
A. D. 1448: Lorenzo de Medici.....born.

B. C. 453: Cleon .....born.
A. D. 1453: Albuquerque, Gonzalo.....born.

B. C. 473: Prodicus .....born.
A. D. 1473: Copernicus .....born.

B. C. 479: Protagoras .....born.
A. D. 1479: Sodoma, Giraldi.....born.

B. C. 479: Battle of Platæa.
A. D. 1479: Battle of Weissenburg.

B. C. 480: Battles of Therymopylæ and Salamis.
A. D. 1480: Spanish Inquisition established.

B. C. 488: Phidias .....born.
A. D. 1488: Raimondi, Van Hutten, Coverdale, Beccafumi .....born.

B. C. 496: Hellanicus .....born.
A. D. 1496: Marot, Gustavus Vasa.....born.

B. C. 497: Pericles .....born.
A. D. 1497: Melancthon, Holbein .....born.

B. C. 519: Cratinus .....born.
A. D. 1519: Beza, Cæsalpinus.....born.

B. C. 520: Cincinnatus, Aristides.....born.
A. D. 1520: Flacius, Castelnau, Cujas, Goujon, Churchyard .....born.

B. C. 522: Pindar .....born.
A. D. 1522: Egmont, Aldrovandi.....born.

B. C. 525: Cambyses conquered Egypt.
A. D. 1525: Battle of Pavia.

B. C. 539: Parmenides .....born.
A. D. 1539: Socinus, Acosta.....born.

B. C. 555: Simonides .....born.
A. D. 1555: Carracci, Arndt, Malherbe.....born.

B. C. 576: Cyrus the Great.....born.
A. D. 1576: Burton, Vincent de Paul.....born.

B. C. 578: Servius Tullius.....born.
A. D. 1578: Harvey, Albani.....born.

B. C. 582: Pythagoras .....born.
A. D. 1582: Episcopius .....born.

B. C. 582: Agrigentum founded.
A. D. 1582: Edinburgh University founded.

B. C. 598: Nebuchadnezzar captured Jerusalem.
A. D. 1598: Edict of Nantes.

B. C. 604: Lâo-tsze .....born.
A. D. 1604: John Eliot, Heem, Pocock.....born.

B. C. 606: Anaximenes .....born.
A. D. 1606: Rembrandt, Corneille, Gerhardt....born.

B. C. 608: Sappho .....born.
A. D. 1608: Torricelli, Milton, Fuller, Clarendon, Montecuculi, Monk.....born.

B. C. 608: Chess invented.
A. D. 1608: Telescope invented.

B. C. 620: Æsop, Alcæus, Xenophanes.....born.
A. D. 1620: Evelyn, Maimbourg.....born.

B. C. 628: Epimenides .....born.
A. D. 1628: Bunyan, Perrault, Luxembourg, Malpighi .....born.

B. C. 638: Solon .....born.
A. D. 1638: Malebranche, Simon, Hobbema.....born.

B. C. 644: Thales .....born.
A. D. 1644: Boufflers, William Penn.....born.

B. C. 660: Japan founded.
A. D. 1660: Royal Society, London, founded.

B. C. 675: Byzantium founded.
A. D. 1675: Greenwich Observatory founded.

B. C. 753: Rome founded.
A. D. 1753: British Museum founded.

B. C. 776: First authentic date.
A. D. 1776: U. S. Declaration of Independence.

B. C. 780: Zaleucus .....born.
A. D. 1780: Béranger, Audubon, Chalmers, Channing, Ingres .....born.

B. C. 814: Macedon founded.
A. D. 1814: Kingdom of Hanover founded.

The next list consists of dates B. C. which are 100 years apart:

B. C. 705: Esarhaddon .....born.
B. C. 605: Pisistratus .....born.

B. C. 651: Pittacus .....born.
B. C. 551: Confucius .....born.

B. C. 644: Thales .....born.
B. C. 544: Ageladas .....born.

B. C. 630: Stesichorus, Erinna.....born.
B. C. 530: Cleomenes .....born.

B. C. 620: Æsop, Alcæus, Xenophanes.....born.
B. C. 520: Cincinnatus, Aristides .....born.

B. C. 608: Sappho .....born.
B. C. 508: Pausanias .....born.

B. C. 590: Crœsus .....born.
B. C. 490: Empedocles .....born.

B. C. 540: Epicharmus .....born.
B. C. 440: Parrhasius .....born.

B. C. 536: Heraclitus .....born.
B. C. 436: Isocrates .....born.

B. C. 525: Æschylus .....born.
B. C. 425: Antisthenes .....born.

B. C. 520: Cincinnatus, Aristides..... born.
B. C. 420: Isæus ..... born.

B. C. 512: Phrynicus .....born.
B. C. 412: Diogenes .....born.

B. C. 508: Pausanias .....born.
B. C. 408: Dion, Timoleon .....born.

B. C. 496: Hellanicus ..... born.
B. C. 396: Xenocrates, Hyperides.....born.

B. C. 484: Herodotus ..... born.

B. C. 384: Aristotle, Demosthenes.....born.

B. C. 468: Socrates .....born.
B. C. 368: Theophrastus .....born.

B. C. 460: Democritus, Hippocrates.....born.
B. C. 360: Protogenes .....born.

B. C. 456: Brasidas .....born.
B. C. 356: Alexander the Great..... born.

B. C. 454: Timotheus .....born.
B. C. 354: Cassander .....born.

B. C. 450: Alcibiades..... .....born.
B. C. 350: Zeno .....born.

B. C. 446: Camillus ..... born.
B. C. 346: Demetrius Phalereus.....born.

B. C. 441: Philistus .....born.
B. C. 341: Epicurus ..... born.

B. C. 435: Philoxenus .....born.
B. C. 335: Demetrius Poliorcetes.....born.

B. C. 432: Lysander .....born.
B. C. 332: Apelles .....born.

B. C. 399: Eudoxus .....born.
B. C. 299: Callimachus .....born.

B. C. 387: Praxiteles .....born.
B. C. 287: Archimedes .....born.

B. C. 368: Theophrastus .....born.
B. C. 268: Marcellus .....born.

B. C. 352: Timæus .....born.
B. C. 252: Philopœmen .....born.

B. C. 310: Theocritus .....born.
B. C. 210: Polybius .....born.

B. C. 249: Apollonius .....born.
B. C. 149: Lucilius .....born.

B. C. 238: Ennius, Masinissa .....born.
B. C. 138: Sulla .....born.

B. C. 205: Æmilius .....born.
B. C. 105: Lucullus, Laberius .....born.

B. C. 170: Philostratus .....born.
B. C. 70: Virgil, Mæcenas .....born.

B. C. 114: Hortensius .....born.
B. C. 14: Philo .....born.

The next list consists of dates B. C. which are 200 years apart:

B. C. 650: Draco .....born.
B. C. 450: Alcibiades .....born.

B. C. 630: Stesichorus, Erinna .....born.
B. C. 430: Dionysius .....born.

B. C. 620: Æsop, Alcæus, Xenophanes .....born.
B. C. 420: Isæus .....born.

B. C. 608: Sappho .....born.
B. C. 408: Timoleon .....born.

B. C. 552: Hipparchus .....born.
B. C. 352: Timæus .....born.

B. C. 535: Thespis first exhibited Tragedy.
B. C. 335: First private library.

B. C. 480: Euripides, Antiphon .....born.
B. C. 280: Chrysippus .....born.

B. C. 471: Thucydides .....born.
B. C. 271: Aratus .....born.

B. C. 468: Socrates .....born.
B. C. 268: Marcellus .....born.

B. C. 445: Eupolis .....born.
B. C. 245: Hermippus .....born.

B. C. 438: Lysias .....born.
B. C. 238: Ennius .....born.

B. C. 429: Plato .....born.
B. C. 229: Paulus .....born.

B. C. 316: Arcesilaus .....born.
B. C. 116: Varro .....born.

B. C. 276: Eratosthenes .....born.
B. C. 76: Asinius Pollio .....born.

B. C. 265: Nævius .....born.
B. C. 65: Horace .....born.

B. C. 260: First Roman fleet.
B. C. 60: First Roman Triumvirate.

The next list consists of dates B. C. 500 years apart:

B. C. 995: Homer .....born.
B. C. 495: Sophocles .....born.

B. C. 912: Lycurgus .....born.
B. C. 412: Diogenes .....born.

B. C. 638: Solon .....born.
B. C. 138: Sulla .....born.

B. C. 606: Anaximenes .....born.
B. C. 106: Pompey, Cicero .....born.

B. C. 583: Ibycus .....born.
B. C. 83: Mark Antony .....born.

B. C. 570: Theognis .....born.
B. C. 70: Virgil .....born.

B. C. 562: Anacreon .....born.
B. C. 62: Agrippa .....born.

B. C. 542: Cyrus overthrew Crœsus.

B. C. 42: Battle of Phillippi.

B. C. 519: Persian Empire founded.
B. C. 19: Rome subdued Spanish Peninsula.

B. C. 510: Cimon .....born.
B. C. 10: Claudius (Tiberius).....born.

The next list consists of dates B. C. which are 1000 years apart:

B. C. 1556: Athens founded.
B. C. 556: Persians conquered Medes.

B. C. 1490: Sparta founded.
B. C. 490: Battle of Marathon.

B. C. 1431: Mycenæ founded.
B. C. 431: Peloponnesian War begun.

The following list is of dates A. D. which are 100 years apart:

A. D. 25: Silius Italicus .....born.
125: Apuleius .....born.

A. D. 245: Diocletian .....born.
345: Rufinus .....born.

752: Irene .....born.
852: Albategni .....born.

825: Methodius .....born.
925: Dunstan .....born.

839: Tabari .....born.
939: Almansor, Hugh Capet.....born.

1160: Villehardouin .....born.
1260: Frauenlob .....born.

1165: William the Lion.....born.

1265: Dante, Duns Scotus.....born.

1216: Kublai Khan.....born.
1316: Barbour.....born.

1240: Cimabue .....born.
1340: Chaucer, Groot.....born.

1265: House of Commons founded.
1365: Vienna University founded.

1268: Barons' War.
1368: Moguls expelled from China.

1275: Andrea, Villani.....born.
1375: Lydgate .....born.

1304: Petrarch, Ibn Batuta.....born.
1404: Alberti .....born.

1347: Bajazet, St. Catherine.....born.
1447: Botticelli .....born.

1351: Order of Garter instituted.
1451: Glasgow University founded.

1355: Chrysoloras .....born.
1455: Reuchlin .....born.

A. D. 1369: John Huss .....born.
1469: Machiavelli, Emmanuel the Great..born.

1382: Solario .....born.
1482: Marcantonio .....born.

1398: Filelfo .....born.
1498: Moretto .....born.

1401: Cusa .....born.
1501: Cardan .....born.

1403: Chastelain .....born.
1503: Wyatt, Estienne.....born.

1421: Engraving invented.

1521: Muskets invented.

1425: Henryson .....born.
1525: Maitland .....born.

1428: Warwick, Acciajuoli .....born.
1528: Veronese, Muziano.....born.

1433: Ficino, Mirkhond.....born.
1533: Montaigne, William the Silent, Queen Elizabeth, Baldi .....born.

1437: Abrabanel .....born.
1537: Guarini .....born.

1440: Signorelli .....born.
1540: Scaliger (J. J.), Brantome, Wm. Gilbert .....born.

1444: Bramante .....born.
1544: Tasso .....born.

1446: Perugini, Columbus.....born.
1546: Tycho Brahe, Farnese, Fischart.....born.

1451: Vespucci .....born.
1551: Camden, Espinel.....born.

A. D. 1452: Savonarola, Leonardo da Vinci.....born.
1552: Spenser, Raleigh, Coke, Sarpi, Gentili, Ricci, Chiabrera.....born.

1455: First printed book.
1555: Diet of Augsburg.

1460: Skelton, Dunbar, Gama, Linacre...born.
1560: Crichton, Arminius, Ainsworth.....born.

1465: Luini, Boece.....born.
1565: Tassoni, Argensola.....born.

1467: Erasmus, Sigismond the Great.....born.
1567: Acidalius, Alabaster .....born.

1468: Encina .....born.
1568: Monteverde, Campanella.....born.

1470: Magellan .....born.
1570: Ferishta .....born.

1472: Cranach, Elias Levita.....born.
1572: Aarssens .....born.

1473: Copernicus .....born.

1573: Donne, Regnier.....born.

1474: Ariosto, Douglas, Las Casas.....born.
1574: Marston, Ben Jonson.....born.

1477: Titian, Giorgione .....born.
1577: Rubens, Allori, Jacob Cats, Dekker.born.

1481: Peruzzi .....born.
1581: Domenichino, Hooft.....born.

1483: Baber, Luther, Raphael, Jovins, Gardiner, Guicciardini .....born.
1583: Grotius, Wallenstein, Gibbons.....born.

1484: Tyndale, Zwingli, Ferrari, Areson, Scaliger (J. S.).....born.
1584: Selden, Massinger, Duchesne, Pym..born.

A. D. 1485: Cortez .....born.
1585: Richelieu, Beaumont, Jansen, Drummond, Bartholinus.....born.

1492: Pippi .....born.
1592: Gassendi, Guercino, Buckingham...born.

1493: Paracelsus .....born.
1593: Ferrar, Izaak Walton.....born.

1509: Calvin .....born.
1609: Hale, Fleming .....born.

1510: Palissy, Moroni, Goudimel.....born.
1610: Ormonde, Duquesne, Asselyn, Ducange .....born.

1511: Servetus .....born.
1611: Fairfax, Turenne .....born.

1512: Mercator, Ravenna, Tintoretto, Vasari .....born.
1612: Butler, Leighton, Arnauld .....born.

1513: Amyot .....born.
1613: Menage, La Rochefoucauld, Crashaw, Montrose, Jeremy Taylor.....born.

1515: Tallis, Neri, St. Theresa, Roger Ascham .....born.
1615: Baxter, Denham, Salvator Rosa.....born.

1517: Surrey, John Foxe.....born.
1617: Cudworth .....born.

1520: Massacre of Stockholm.
1620: Battle of Prague.

1521: Maurice .....born.
1621: Shaftesbury, Condé, Marvell, La Fontaine .....born.

A. D. 1524: Palestrina, Rousard, Camoens, Erastus, Hotman, Bologne.....born.
1624: Sobieski, Sydenham.....born.

1527: Dee.....born.
1627: Bossuet, Boyle.....born.

1530: Bodin.....born.
1630: Barrow, Tillotson, Huet, Metsu.....born.

1535: Molina, Frobisher, Gascoigne.....born.
1635: Spener, Betterton.....born.

1538: Baronius.....born.
1638: Malebranche, Simon, Hobbema.....born.

1539: Socinus, Acosta.....born.
1639: Racine.....born.

1541: Charron.....born.
1641: Arnaud, Rymer.....born.

1542: Bellarmine, Akbar.....born.
1642: Newton, Filicaja.....born.

1544: Tasso.....born.

1644: Bouflers, William Penn.....born.

1553: Eccard, Alpini, Hakluyt, Lyly.....born.
1653: Corelli.....born.

1571: Kepler.....born.
1671: Cibber.....born.

1585: Edict of Nemours.

1685: Edict of Nantes revoked.

1586: Barneveldt, Ford.....born.
1686: Fahrenheit, Ramsay, Law.....born.

1588: Salmasius, Hobbes.....born.
1688: Pope, Swedenborg, Marivaux, Fréret, Gay, Nadir Shah.....born.

A. D. 1597: Romanoff, Van Tromp.....born.
1697: Maupertuis, Hogarth, Anson, D'Anville .....born.

1602: Cardinal Mazarin.....born.
1702: Doddridge .....born.

1604: John Eliot, Heem, Pocock.....born.
1704: Arne, Mansfield.....born.

1605: Waller, Urquhart.....born.
1705: Tucker, Hartley, Artedi, Farinelli..born.

1609: Thermometer invented.
1709: Anemometer invented.

1623: Pascal .....born.
1723: Blackstone, Ruhnken, Adam Smith, Sir Joshua Reynolds.....born.

1624: Sobieski, Sydenham.....born.
1724: Kant .....born.

1629: Huyghens .....born.
1729: Lessing, Burke, Heyne, Spallanzani.born.

1632: Locke, Spinoza, Pepys, Wren, Puffendorf, Hooch, Bourdaloue, Mabillon, Beaumarchais, Fléchier, Grævius, Leeuwenhock .....born.
1732: Washington, Hastings, Haydn, Necker, Lalande, Falconer, Arkwright.born.

1633: Vandevelde, South, Magliabechi....born.
1733: Priestley .....born.

1636: Boileau, Hyde.....born.
1736: Watt, Tooke, Lagrange.....born.

1640: Wycherley, Fleury, Hennepin, Leopold the Great.....born.
1740: Boccherini, Boswell, Montgolfier, Bellman .....born.

A. D. 1642: First Public Schools, U. S.
1742: Centigrade Thermometer invented.

1643: Burnet .....born.
1743: Paley, Condorcet, Jefferson, Cagliostro, Lavoisier, Jacobi.....born.

1645: La Bruyère .....born.
1745: Volta, Jay, Lindley Murray, Hannah More .....born.

1645: Battle of Naseby.
1745: Battle of Fontenoy.

1646: Leibnitz ..... born.
1746: Pestalozzi, Kosciusco, Grattan, Wyttenbach, Monge, Goya, Sir Wm. Jones ..... born.

1648: Kneller, Barclay.....born.
1748: David, Bentham, Bürger.....born.

1651: Fenelon, Otway.....born.
1751: Sheridan, Eldon, Voss.....born.

1652: First newspaper advertisement.
1752: First English Bible printed in the U. S.

1653: Corelli .....born.
1753: Roscoe, Carnot, Bewick, Stanhope, Vergniaud, Dugald, Stewart.....born.

1655: Steffani .....born.
1755: Hahnemann, Flaxman, Marie Antoinette, Mrs. Siddons.....born.

1657: Fontenelle .....born.
1757: Lafayette, Canova, Hamilton, Augereau, Kemble, Gillray, Wm. Blake born.

1659: A. Scarlatti .....born.
1759: Porson, Wilberforce, Pitt, Danton, Schiller, Burns.....born.

A. D. 1660: Stahl, Sloane .....born.
1760: Cherubini, St. Simon, Desmoulins...born.

1661: Rollin, De Foe, Buffier, Fux, Dahlstjerna .....born.
1761: Opie, Gallatin, Pichegru, Sir John Moore .....born.

1663: Magnusson, Amontons, Cotton Mather, Eugene of Savoy.....born.
1763: Richter, Talma, Morland, Fouché...born.

1664: Prior, Alberoni, Queen Anne.....born.
1764: Bernadotte, Abernethy, Robert Hall.born.

1666: Geminiani, Vanbrugh, Wotton.....born.
1766: Malthus, Wollaston, Dalton, Ersch, Mme. de Stael, Alex. Wilson, Lady Nairne .....born.

1667: Swift, Arbuthnot, Whiston.....born.
1767: Schlegel, Hofer, Maria Edgeworth...born.

1667: Calculating machine invented.
1767: First Nautical Almanac.

1668: Boerhaave, Le Sage, Vico, D'Agues-seau, Fabricius..... born.
1768: Chateaubriand, Schleiermacher, Alvarez, Anglesey, Kriloff.....born.

1674: Crébillon, Isaac Watts.....born.

1774: Southey, Mezzofanti, Braham, Ashburton, Thibaut, Tannahill.....born.

1678: Bolingbroke, Farquhar.....born.
1778: De Candolle, Hallam, Gay-Lussac, Peale, Hazlitt, Hummel, Ast, Sir Humphrey Davy.....born.

A. D. 1679: Abanzit .....born.
1779: Brougham, Oken, Allston, Oehlenschläger, Berzelius, Thomas Moore .....born.

1681: Edward Young.....born.
1781: Stephenson, Chantrey, Poisson.....born.

1682: Bottcher .....born.
1782: Webster, Calhoun, Froebel, Lamennais, Sir Chas. Napier.....born.

1683: Middleton, Reaumur, D. Scarlatti...born.
1783: Bolivar, Irving, Geijer.....born.

1684: Lardner, Holberg, Astruc, Durante..born.
1784: Burckhardt, Paganini, Auber, Spohr, Palmerston, Worcester, Knowles, Leigh Hunt.....born.

1685: Handel, Bach, Berkeley.....born.
1785: Wilkie, Grimm, Napier, Broglie, De Quincey, Croly, Boeckh, Manzoni, Christopher North.....born.

1687: Bengel, Dillen.....born.
1787: Kean, Uhland, Guizot, Etty, Archbishop Whately.....born.

1689: Montesquieu, Piron.....born.
1789: Neander, Overbeck, Daguerre, Horace Vernet, J. Fenimore Cooper..born.

1690: First Newspaper, U. S.
1790: Metric system originated.

1691: Hardwicke .....born.
1791: Faraday, Bunsen, Czerny, Grillparzer, Encke, Bopp, Chas. Wolfe.born.

A. D. 1692: Bishop Butler .....born.
1792: Rossini, Cruikshank, Marryatt, Shelley, Payne, Bowring, Baratynski, Cousin, Baur, Murchison, Gieseler, Keble.....born.

1693: James Quin.....born.
1793: Macready, Eastlake, Almquist, Delavigne, Felicia Hemans.....born.

1694: Chesterfield, Voltaire, Mosheim, Hutcheson .....born.
1794: Lockhart, Meyerbeer, Grote, Moscheles, D'Aubigné, Everett, W. C. Bryant, Paul de Kock.....born.

1696: Brucker, Lignori, Marshal Saxe.....born.
1796: Corot, Steiner, W. H. Prescott.....born.

1698: Warburton, Savage, Metastasio.....born.
1798: Comte, Michelet, Beneke, Delacroiz, Leopardi, Azeglio, Mickiewicz, Donizetti, Banim, Thomas Hood..born.

1701: Graun, Boscovich, Hyder Ali.....born.
1801: Gioberti, Littré, Bremer, Plückner, Bastiat .....born.

1702: First English newspaper (daily).
1802: Photography invented.

1703: Wesley, Jonathan Edwards.....born.
1803: Jerrold, Emerson, Liebig, Borrow, Ewald, Mérimée, Berlioz.....born.

1704: Arne, Mansfield .....born.
1804: Sue, Hawthorne, Cobden, Sainte Beuve, D'Israeli, Garrison, Glinka, Sir Julius Benedict, George Sand.born.

A. D. 1707: Linnæus, Buffon, Goldoni, Fielding, Euler, Ernesti .....born.
1807: Agassiz, Longfellow, Whittier, Garibaldi .....born.

1707: First Parliament, Great Britain.
1807: Slavery abolished, Great Britain.

1709: Dr. Johnson, Gresset.....born.
1809: Mendelssohn, Tennyson, Chopin, Poe, Lincoln, Holmes, Darwin, Gladstone, Proudhon, Ricasoli, Maccullagh, Park Benjamin, Elizabeth B. Browning .....born.

1710: Reid, Pergolesi, Cullen.....born.
1810: Alford, Musset, Schumann, Cavour, Reuter, Mario, Tupper, Ole Bull, Theodore Parker .....born.

1711: Hume, Piranesi, Kaunitz.....born.
1811: Thackeray, Sumner, Gautier, Bright, Liszt, Burritt, Leverrier, Sandeau, Greeley, Wendell Phillips.....born.

1711: War, Russia and Turkey.
1811: Massacre of Mamelukes.

1712: Rousseau, Frederick the Great.....born.
1812: Dickens, Browning, Flotow, Meissonier, Thalberg, Grisi, Macleod.....born.

1713: Diderot, Sterne, Lacaille.....born.
1813: Lepsius, Wagner, Beecher, Pitman, Helps, Waitz, Dr. Livingstone....born.

1714: Vattel, Whitefield, Shenstone, Gluck born.
1814: Verdi, Bismarck, Reade, Motley, Ernst, Millet, Harriet Beecher Stowe .....born.

A. D. 1714: Typewriter invented.
1814: First printing machine.

1715: Helvetius, Condillac, Lemonnier.....born.
1815: Tischendorf, Dean Stanley, Grace Darling .....born.

1716: Garrick, Gray, Barthélemy.....born.
1816: Gerstäcker, Smiles, Charlotte Bronte, Charlotte Cushman, Philip James Bailey .....born.

1717: D'Alembert, Winckelmann, Michaelis, Maria Theresa.....born.

1817: Thoreau, Armitage, Lotze.....born.

1718: Brainerd, H. Walpole.....born.
1818: Northcote, Gounod, Froude, Tourgueneff .....born.

1720: Collins, Stuart, Bonnet.....born.
1820: Tyndall, Spencer, Vieuxtemps, Dr. Kane, Jenny Lind, Florence Nightingale .....born.

1721: Smollett, Akenside, Foote, Wm. Collins .....born.
1821: Buckle, Mariette, Baker, Ristori, Sir Richard Burton, Sims Reeves.....born.

1723: Blackstone, Ruhnken, Adam Smith, Sir Joshua Reynolds.....born.

1823: Renan, Max Müller.....born.

1726: Schwarz, John Howard.....born.
1826: Kirchoff .....born.

1726: Fahrenheit thermometer invented.
1826: Kerosene first used.

A. D. 1727: Wilkes, Turgot, Gainsborough, Gen. Wolfe .....born.
1827: Speke .....born.

1728: Goldsmith, Hunter, Frisi, Capt. Cook.born.
1828: Ibsen, Tolstoi, Rossetti, Sala, Bierstadt .....born.

1729: Lessing, Burke, Heyne, Spallanzani.born.
1829: Rubinstein, Gottschalk .....born.

1730: Suwaroff, Wedgwood .....born.
1830: Blaine .....born.

1730: Reaumur thermometer invented.

1830: Revolvers invented.

1731: Cowper, Churchill, Cavendish.....born.
1831: Sardou, Joachim, Tietjens.....born.

1733: Priestly .....born.
1833: Brahms, Booth, Stedman, Sir Chas. Russell .....born.

1734: Romney, Mesmer, Barthez.....born.
1834: Spurgeon .....born.

1735: Beattie, Boone.....born.
1835: Samuel L. Clemens ("Mark Twain")..born.

1735: Stereotyping invented.
1835: Telegraph invented.

1737: Göttingen University founded.
1837: Phonography invented.

1738: Herschel, West .....born.
1838: Lecky .....born.

1739: Dumouriez .....born.
1839: Bret Harte .....born.

A. D. 1741: Lavater, Ali Pasha, Fuseli, Grétry..born.
1841: Joaquin Miller, Prince of Wales.....born.

1742: Blücher, Rennell .....born.
1842: Coppée .....born.

1744: Marat, Herder, Mitford, Lamarck....born.
1844: Munkacsy, Sir Arthur Sullivan.....born.

1746: Princeton University founded.
1846: Neptune discovered.

1747: St. Petersburg University founded.
1847: Sewing machine invented.

1747: Dr. Parr .....born.
1847: Edison .....born.

1750: Curran, Erskine, Werner, Dolomieu..born.
1850: Sara Bernhardt .....born.

1752: Lightning rod invented.
1852: Sydney University founded.

1756: "Black Hole" of Calcutta.
1856: Treaty of Paris.

1757: Battle of Plassy.
1857: Great Mutiny, India.

1758: Achromatic object-glass invented.
1858: Sleeping car invented.

1769: Steam engine invented.
1869: Suez Canal opened.

1770: War, Russia and Turkey.
1870: War, France and Germany.

1771: First English Encyclopædia.
1871: Great Chicago fire.

1777: Knitting machine invented.
1877: Phonograph invented.

A. D. 1789: French Revolution.
1889: Brazilian Revolution.

1793: Cotton-gin invented.
1893: World's Columbian Exposition.

The next list is of dates A. D. 200 years apart.

130: Galen .....born.
330: Basil the Great.....born.

146: Severus .....born.
346: Theodosius the Great.....born.

822: Photius .....born.
1022: Harold II. .....born.

850: Harold Fairhair .....born.
1050: Peter the Hermit.....born.

941: Firdousi .....born.
1141: Nizámí .....born.

945: Eric the Red.....born.
1145: Bohaddin .....born.

1027: William of Normandy.....born.
1227: Thomas Aquinas .....born.

1163: Jenghiz Khan .....born.
1363: Gerson .....born.

1193: Albertus Magnus .....born.
1393: Capgrave .....born.

1206: Pisano .....born.
1406: Valla .....born.

1207: Rúmí .....born.
1407: Littleton .....born.

1223: Elmacin .....born.
1423: Louis XI. .....born.

A. D. 1226: Abulfaragius .....born.
1426: Pontanus .....born.

1286: Odoric .....born.
1486: Eck .....born.

1325: Gower .....born.
1525: Maitland .....born.

1364: Makrízí .....born.
1564: Shakespeare, Marlowe, Galileo, Bux-
torf .....born.

1378: Hardyng, Ghiberti .....born.
1578: Harvey, Albani .....born.

1380: Poggio, St. Bernardin, Thomas à
Kempis .....born.
1580: Allegri, Archbishop Ussher.....born.

1387: Fiesole .....born.
1587: Olivarez .....born.

1403: Battle of Shrewsbury.
1603: Union of England and Scotland.

1409: Leipsic University founded.
1609: Bank of Amsterdam founded.

1431: Villon, Mantegna, Elphinstone.....born.
1631: Dryden .....born.

1450: Manutius .....born.
1650: Marlborough, Rooke, William Prince
of Orange .....born.

1453: Turks captured Constantinople.
1653: "Barebones" Parliament.

1476: Sebastian Cabot .....born.
1676: Giannone, Sir Robert Walpole.....born.

A. D. 1489: Cranmer, Vida .....born.
1689: Montesquieu, Piron .....born.

1499: Alasco .....born.
1699: Dyer .....born.

1506: Xavier, Buchanan, Sleidanus.....born.
1706: Martini, Benjamin Franklin.....born.

1508: Alva .....born.
1708: Haller, Chatham .....born.

1509: Diving bell invented.
1709: Piano forte invented.

1535: First English Bible printed.
1735: Stereotyping invented.

1554: Hooker, Sir Philip Sidney.....born.
1754: Talleyrand, Crabbe, Kleber, Maistre, Mme. Roland .....born.

1562: Lope de Vega.....born.
1762: Fichte, Cobbett, Bowles, Carey, Samuel Rogers, Joanna Baillie.....born.

1569: Spinola .....born.
1769: Napoleon, Wellington, Soult, Ney, Humboldt, Cuvier, Castlereagh, Brunel, Bourrienne, Sir Thomas Lawrence, Mehemet Ali, Sir John Malcolm .....born.

1572: Aarssens .....born.
1772: Coleridge, Novalis, Fourier, Ricardo, Hogg, Fauriel .....born.

1577: Rubens, Allori, Dekker, Jacob Cats..born.
1777: Campbell, Gauss, Oersted, La Motte, Fouqué, Henry Clay.....born.

A. D. 1605: Gunpowder plot.
1805: Battle of Trafalgar.

1614: Logarithms invented.
1814: First locomotive.

1640: "Short" and "Long" Parliament.
1840: Penny postage originated.

1643: Barometer invented.
1843: Steam lathe invented.

1694: Bank of England established.
1894: War, China and Japan

The next list is of dates A. D. 300 years apart.

730: Alcuin .....born.
1030: St. Bruno .....born.

822: Photius .....born.
1122: Eleanor of Aquitaine.....born.

874: Iceland settled.
1174: Leaning Tower of Pisa commenced.

980: Avicenna .....born.
1280: William of Occam.....born.

990: Damiani .....born.
1290: John Tauler .....born.

1040: Rashi .....born.
1340: Chaucer, Groot .....born.

1157: Bank of Venice established.
1457: First newspaper.

1221: Bonaventura .....born.
1521: Maurice .....born.

1325: Gower .....born.
1625: Nicole .....born.

A. D. 1349: Iron wire first made.
1649: Hydraulic press invented.

1477: Watches and Violins invented.
1777: Torpedoes invented

1480: Spanish Inquisition established.
1780: Sunday-Schools established.

1492: Columbus discovered America.
1792: Battle of Valmy.

1526: Mogul Empire founded.
1826: War, Turkey and Russia.

1551: First Comedy performed, England.
1851: World's Fair. London.

The next list is of dates A. D. 500 years apart.

36: Quintilian .....born.
536: Agathias, Evagrius .....born.

232: War, Severus and Persians.
732: Battle of Tours.

614: St. Hilda .....born.
1114: Gerard of Cremona .....born.

622: Hegira of Mohammed.
1122: Concordat of Worms.

689: Charles Martel .....born.
1189: St. Edmund .....born.

698: Arabs destroyed Carthage.
1198: Battle of Gisors.

750: Organ invented.
1250: Gunpowder invented.

829: England founded.
1329: Ottoman Empire founded.

A. D. 886: Oxford University founded.
1386: Heidelberg University founded.

886: Mas' údy .....born.
1386: Donatello .....born.

891: Rúdagí .....born.
1391: Michelozzi .....born.

895: Athelstane .....born.
1395: Bessarion .....born.

896: Hungary founded.
1396: Battle of Nicopolis.

919: Germany founded.
1419: Hussite wars began.

920: Haco .....born.
1420: Torquemada, John Wessel.....born.

935: Hrosvitha .....born.
1435: Verrocchio .....born.

971: Mahmood .....born.
1471: Wolsey, Dürer, Pizarro.....born.

980: Avicenna .....born.
1480: Carlstadt, Gringoire, Sir Thomas More .....born.

990: Damiani .....born.
1490: Rabelais, Colonna, Lindsay, Schwenkfeld, Berni, Hugh Latimer.....born.

992: Poland founded.
1492: Columbus discovered America.

994: Godwine .....born.
1494: Hans Sachs, Correggio, Castillejo, Beaton, Van Leyden.....born.

A. D. 998: Berengarius .....born.
1498: Moretto .....born.

1004: Nasir Khosran, Edward the Confessor .....born.
1504: Parmigiano .....born.

1005: Lanfranc .....born.
1505: John Knox .....born.

1017: Omar Khayyám .....born.
1517: Surrey, Zarlino, Granvella, John Foxe .....born.

1017: Danes conquered England.
1517: Reformation.

1018: Hardicanute .....born.
1518: Robusti, Palladio .....born.

1029: Alp Arslan .....born.
1529: Leicester .....born.

1033: Anselm .....born.

1533: Montaigne, William the Silent, Queen Elizabeth, Baldi .....born.

1054: Hariri .....born.
1554: Hooker, Sir Philip Sidney.....born.

1059: Algazali .....born.
1559: Tilly, Casaubon, Chapman.....born.

1070: Champeaux .....born.
1570: Ferishta .....born.

1075: Ordericus Vitalis .....born.
1575: Guido, Böehmen, Calderwood.....born.

1079: Abelard .....born.
1579: Fletcher, Rohan .....born.

A. D. 1091: St. Bernard .....born.
1591: Herrick .....born.

1094: St. Malachy .....born.
1594: Saint-Amant, Hampden, Poussin, Gustavus Adolphus .....born.

1098: Hildegard .....born.
1598: Voiture, Robert Blake.....born.

1099: Edrisi .....born.
1599: Velazquez, Van Dyck, Cromwell, Piccolomini, Bochart, Roger Williams .....born.

1118: Thomas à Becket.....born.
1618: Cowley, Murillo .....born.

1118: Order Knights Templars founded.
1618: Thirty Years War began.

1119: Ferid-Eddin-Athar .....born.
1619: Colbert, Rupert, Le Brun.....born.

1126: Averrhoes .....born.
1626: Christina, Mme. Sévigné.....born.

1135: Maimonides, St. Hugh.....born.
1635: Spener, Betterton .....born.

1137: Saladin .....born.
1637: Ken .....born.

1147: Barri .....born.
1647: Bayle ....born.

1150: First Almanac.
1650: Air pump invented.

1152: Gervaise .....born.
1652: Dampier, Pitcairne .....born.

A. D. 1157: Richard Cœur de Lion.....born.
1657: Fontenelle .....born.

1157: Bank of Venice established.
1657: Reflecting telescope invented.

1162: Abdallatif .....born.
1662: Bentley, Atterbury .....born.

1170: St. Dominic .....born.
1670: Congreve, Carolan, Dubos.....born.

1172: Conquest of Ireland.
1672: Conquest of Holland.

1175: Grosseteste .....born.
1675: Samuel Clarke .....born.

1179: Snorro Sturluson .....born.
1679: Abuzit .....born.

1180: Carpini .....born.
1680: Cavalier, Astorga .....born.

1182: Accorsi, St. Francis.....born.
1682: Bottcher .....born.

1190: Order Teutonic Knights founded.
1690: Battle of the Boyne.

1191: Vincent, Scot .....born.
1691: Hardwicke .....born.

1194: Eccélino .....born.
1694: Chesterfield, Voltaire, Mosheim, Hutcheson .....born.

1203: Inquisition founded.
1703: St. Petersburg founded.

1204: Latin Kingdom founded.
1704: Battle of Blenheim.

A. D. 1211: Ibn Khallikan .....born.
1711: Hume, Piranesi, Kaunitz.....born.

1226: Abulfaragius .....born.
1726: Schwarz, John Howard.....born.

1231: Manfred .....born.
1731: Cowper, Churchill, Cavendish.....born.

1237: Durandus .....born.
1737: Gibbon, Hutton, Geddes, Galvani, Paine .....born.

1246: Siege of Seville.
1746: Battle of Culloden.

1249: Amadeus the Great.....born.
1749: Mirabeau, Goethe, Jenner, Fox, Laplace, Alfieri, Cimarosa, Vogler, Tippoo Saib .....born.

1268: Barons' War.
1768: War, Russia and Turkey.

1270: Wallace, Cino .....born.
1770: Wordsworth, Thorwaldsen, Beethoven, Hegel, Foster, Canning, Lord Liverpool, Sir Francis Burdett....born.

1273: Abulfeda .....born.
1773: Jeffrey, F. Schlegel, Tieck, Sismondi, Metternich, Thomas Young.....born.

1283: Alhambra commenced.
1783: Balloon invented.

1288: Gersonides .....born.
1788: Schopenhauer, Byron, Hook, Arnott, Rückert, Kisfaludy, Sir Robert Peel, Sir Wm. Hamilton.....born.

A. D. 1290: Tauler .....born.
1790: Champollion, Parry, Bozzarris, Lamartine, Atterbom, Gibson, Kölcsey .....born.

1296: Battle of Dunbar.
1796: Battle of Lodi.

1298: Battle of Stirling.
1798: Battle of the Nile.

1299: Spectacles invented.
1799: Lithography invented.

1302: Mariner's Compass invented.
1802: Photography invented.

1312: Orleans University founded.
1812: Moscow burned.

1315: Battle of Morgarten.
1815: Battle of New Orleans.

1324: Wycliffe .....born.
1824: Dobell, Alboni, Wilkie Collins.....born.

1332: Ibn Khaldoun .....born.
1832: Bjornsen, Doré, Ferry, Edwin Arnold .....born.

1336: Tamerlane .....born.
1836: T. B. Aldrich, Almeda-Tameda, Parepa-Rosa .....born.

1337: Froissart .....born.
1837: Moody, Swinburne .....born.

1346: Battle of Crecy.
1846: Polish Republic crushed.

1348: Holland founded.
1848: German Empire established.

A. D. 1363: Fire arms invented.
1863: Battle of Gettysburg.

1367: Kremlin (Moscow) founded.
1867: Paris Exposition.

1367: Battle of Navaretta.
1867: War, England and Abyssinia.

1369: Bastile founded.
1869: Suez Canal opened.

The next list is of dates A. D. 1000 years apart.

34: Perseus .....born.
1034: Cid .....born.

40: Titus .....born.
1040: Rashi .....born.

53: Trajan .....born.
1053: Guibert, Saná'í .....born.

55: Tacitus .....born.
1055: Hildebert .....born.

60: Apollodorus .....born.
1060: Bouillon .....born.

121: Marcus Antoninus .....born.
1121: Frederick Barbarossa .....born.

160: Tertullian .....born.
1160: Villehardouin .....born.

185: Origen .....born.
1185: Sa'di .....born.

196: Fall of Byzantium.
1196: Moors captured Calatrava.

211: Wall of Severus finished.
1211: Siege of Salvatierra.

A. D. 214: Claudius (M. Aurelius).....born.
1214: Roger Bacon .....born.

254: St. Sebastian .....born.
1254: Marco Polo .....born.

265: Eusebius .....born.
1265: Dante, Duns Scotus.....born.

274: Constantine the Great.....born.
1274: Robert Bruce .....born.

282: Jamblichus .....born.
1282: Marignolli .....born.

313: Ulphilas .....born.
1313: Boccaccio, Rienzi .....born.

314: Didymus .....born.
1314: Dugueschlin, Bartolus .....born.

316: Libanius, St. Martin.....born.
1316: Barbour, Orcagna .....born.

325: Council of Nice.
1325: Battle of Cappiano.

328: Valens .....born.
1328: Deschamps .....born.

331: Julian .....born.
1331: Langland .....born.

340: St. Ambrose .....born.
1340: Chaucer, Groot .....born.

347: Chrysostom .....born.
1347: Bajazet, St. Catherine.....born.

354: St. Augustine .....born.
1354: Glendower .....born.

365: Claudianus .....born.
1365: Jerome of Prague.....born.

A. D. 390: Marcian .....born.
1390: Montezuma I. .....born.

390: Massacre at Thessalonica.
1390. European conquests, Amurath I.

396: St. Patrick .....born.
1396: Alphonsus, Cœur .....born.

406: Attila, Genseric .....born.
1406: Valla .....born.

410: Alaric sacked Rome.
1410: Battle of Tannenberg.

423: Ricimer .....born.
1423: Louis XI. .....born.

429: Vandals conquered Sicily.
1429: Battle of Orleans.

434: Odoacer .....born.
1434: Boiardo .....born.

436: Childeric I. .....born.
1436: Ximenes .....born.

454: Theodoric .....born.
1454: Politian .....born.

455: Genseric sacked Rome.
1455: War of "Roses" began.

475: Boetius, Trebonianus .....born.
1475: Michael Angelo, Bayard.....born.

476: Roman Empire fell.
1476: Charles the Bold invaded Switzerland.

487: Procopius .....born.
1487: Sarto .....born.

491: Tribonian .....born.
1491: Loyola, Bucer, Folengo.....born.

A. D. 505: Belisarius .....born.
1505: John Knox .....born.

516: Gildas .....born.
1516: Gesner .....born.

521: St. Columba .....born.
1521: Maurice .....born.

526: Antioch destroyed by earthquake.
1526: Hungary conquered by Turks.

530: Fortunatus .....born.
1530: Bodin .....born.

536: Agathias, Evagrius .....born.
1536: Mariana, Sylburg .....born.

571: Mohammed .....born.
1571: Kepler .....born.

575: Heraclius .....born.
1575: Guido, Böehmen, Calderwood.....born.

583: Omar I. .....born.
1583: Grotius, Wallenstein, Gibbons.....born.

602: Archbishop Theodore .....born.
1602: Cardinal Mazarin .....born.

605: Hwen T'sang, Udall.....born.
1605: Waller, Urquhart .....born.

622: Cædmon .....born.
1622: Molière, Adelaar .....born.

622: Hegira of Mohammed.
1622: First English newspaper.

625: Adamnan .....born.
1625. Nicole, De Witt, Ruysdael, Geulincz..born.

635: Cambridge University founded.
1635: French Academy founded.

A.D. 636: Mosque of Omar founded.
1636: Harvard University founded.

647: Saracens first invaded Africa.
1647: Masaniello's revolt.

651: Dissolution of Persian Kingdom.
1651: Battle of Worcester.

656: Aldhelm .....born.
1656: Halley, Regnard, Largillière.....born.

672: The Venerable Bede.....born.
1672: Addison, Mary Manley, Steele, Muratori, Peter the Great.....born.

680: St. Boniface .....born.
1680: Cavalier, Astorga .....born.

710: Saracens conquered Turkey.
1710: Battle of Saragossa.

713: Bulgarians plundered Thrace.
1713. Peace of Utrecht.

725: Cynewulf .....born.
1725: Clive, Semler, Keppel.....born.

730: Alcuin .....born.
1730: Suwaroff, Wedgwood .....born.

740: Asmai .....born.
1740: Boccherini, Boswell, Montgolfier, Bellman .....born.

742: Charlemagne .....born.
1742: Blücher, Rennell .....born.

752: Irene .....born.
1752: Legendre, Blumenbach, Chatterton, Clementi .....born.

756: Kingdom of Cordova founded.
1756: Seven Years War began.

A.D. 758: Nicephorus .....born.
1758: Nelson, Robespierre, Sacy, Masséna, Noah Webster .....born.

763: Haroun al Raschid.....born.
1763: Richter, Talma, Morland, Fouché...born.

771: Eginhard .....born.
1771: Sir Walter Scott, Bichat, Trevithick, Mungo Park, Sydney Smith.....born.

775: King Egbert .....born.
1775: Lamb, Landor, Schilling, Turner, O'Connell, Grotefend, Ampère, Boieldieu, Camuccini, Chas. Kemble, Jane Austen.....born.

776: Hrabanus .....born.
1776: Niebuhr, Ballanche, Herbart, Bretschneider, Key .....born.

786: Al-Manum .....born.
1786: Weber, Arago, Gesenius, Bishop, Sir John Franklin .....born.

792: Paris University founded.
1792: Battle of Valmy.

799: St. Ignatius .....born.
1799: Balzac, Poushkin, Dollinger, Vigny, Halévy, Finlay, Rothe, Tholuck, Choate .....born.

802: Erigena .....born.
1802: Hugo, Landseer, Bellini, Dumas, Praed, Dé Beriot, Hugh Miller, Harriet Martineau .....born.

805: Albumazar .....born.
1805: Mazzini, Bulwer, Tocqueville, Kaulbach, Gervinus, Hiram Powers, Hans Christian Andersen.....born.

A. D. 806: Hincmar .....born.
1806: Kossuth, Dyce, Lever, Forrest, Sontag, Stirling, John Stuart Mill, N. P. Willis, Robert E. Lee.....born.

808: Walafrid .....born.
1808: Malibran, Balfe, Mrs. Caroline Norton .....born.

812: Danes invaded Ireland.
1812: War with England.

822: Photius .....born.
1822: Pasteur, Schliemann, Parton, Read, Raff, Gen. Grant, Matthew Arnold, Rosa Bonheur .....born.

825: Methodius .....born.
1825: Huxley, Bayard Taylor.....born.

840: Hucbald .....born.
1840: Stanley, Daudet .....born.

861: Kingdom of Navarre founded.
1861: Russian serfs emancipated.

862: Russia founded.
1862: "Merrimac" and "Monitor."

874: Iceland settled.
1874: Telephone invented.

877: Battle of Swansea.
1877: War, Russia and Turkey.

The next list is of dates A. D. 1500 years apart.

9: Vespasian .....born.
1509: Calvin .....born.

37: Josephus, Agricola, Nero.....born.
1537: Guarini .....born.

A. D. 39: Lucan .....born.
1539: Socinus, Acosta .....born.

45: Statius .....born.
1545: Drake .....born.

47: Juvenal .....born.
1547: Cervantes, Bales, Lipsius.....born.

48: Epictetus .....born.
1548: Stevinus, Suarez, Bruno.....born.

51: Domitian .....born.
1551: Camden, Espinel .....born.

61: Pliny the Younger.....born.
1561: Bacon .....born.

96: Arrian .....born.
1596: Descartes, Amyraut .....born.

120: Lucian .....born.
1620: Evelyn, Maimbourg .....born.

256: Arius, Hosins .....born.
1756: Godwin, Mozart .....born.

265: Eusebius .....born.
1765: Mackintosh, Fulton, Karamzin, Baggesen, Bagration, Baader.....born.

297: Athanasius .....born.
1797: Lyell, Delaroche, Thirlwall, Thiers, Heine, De Vigny, Schubert, Mercadante, Karl Müller, Remusat, Lover, Cecilia Faber.....born.

325: Council of Nice.
1825: First passenger railroad.

The next list is of dates B. C. and A. D. which are 500 years apart.

B. C. 460: Democritus, Hippocrates .....born.
A. D. 40: Titus .....born.

B. C. 453: Cleon .....born.
A. D. 47: Juvenal .....born.

B. C. 430: Spartans invaded Attica.
A. D. 70: Coliseum built.

B. C. 260: First Roman fleet.
A. D. 240: Hour-glasses first used.

B. C. 227: War, Sparta and Achaian League.
A. D. 273: Aurelian vanquished Zenobia.

B. C. 170: Philostratus .....born.
A. D. 330: Basil the Great.....born.

B. C. 155: Marius .....born.
A. D. 345: Rufinus .....born.

B. C. 48: Battle of Pharsalia.
A. D. 452: Venice founded.

B. C. 43: Second Roman Triumvirate.
A. D. 457: Saxon Heptarchy.

The next list is of dates B. C. and A. D. which are 1000 years apart.

B. C. 751: Syracuse founded.
A. D. 249: Goths' first Roman invasion.

B. C. 675: Byzantium founded.
A. D. 325: Council of Nice.

B. C. 624: Gautama (Buddha) .....born.
A. D. 376: Alaric .....born.

B. C. 611: Anaximander .....born.
A. D. 399: Ætius .....born.

B. C. 539: First public library.
A. D. 461: Sistine Choir, Rome, established.

B. C. 495: Sophocles .....born.
A. D. 505: Belisarius .....born.

B. C. 284: Alexandrian Library founded.
A. D. 716: Paper invented.

B. C. 237: Antiochus the Great.....born.
A. D. 763: Haroun al Raschid.....born.

B. C. 151: Agatharcides .....born.
A. D. 849: Alfred the Great.....born.

B. C. 65: Horace .....born.
A. D. 935: Hrosvitha .....born.

B. C. 63: Conspiracy of Catiline.
A. D. 937: Battle of Brunanburh.

The next list is of dates B. C. and A. D. which are 1500 years apart.

B. C. 740: Semiramis rebuilt Babylon.
A. D. 760: Bagdad founded.

B. C. 694: Sardanapalus .....born.
A. D. 806: Hincmar .....born.

B. C. 510: Cimon .....born.
A. D. 990: Damiani .....born.

B. C. 460: Democritus, Hippocrates .....born.
A. D. 1040: Rashi .....born.

B. C. 318: Pyrrhus .....born.
A. D. 1182: St. Francis .....born.

B. C. 280: Battle of Heraclea.
A. D. 1220: Frederick II. captured Jerusalem.

B. C. 276: Eratosthenes .....born.
A. D. 1224: Joinville .....born.

B. C. 264: First Punic War.
A. D. 1236: Moors conquered Cordova.

B. C. 217: Second Punic War.
A. D. 1283: Wales subjugated.

B. C. 202: Battle of Zama.
A. D. 1298: Battle of Stirling.

B. C. 109: Atticus .....born.
A. D. 1391: Michelozzi .....born.

B. C. 94: Catullus .....born.
A. D. 1406: Valla .....born.

B. C. 71: Rebellion of Spartacus.
A. D. 1429: Battle of Orleans.

B. C. 63: Strabo, Augustus.....born.
A. D. 1437: Abrabanel .....born.

B. C. 54: Tibullus .....born.
A. D. 1446: Perugini, Columbus..... born.

B. C. 3: Seneca, Galba.....born.
A. D. 1497: Melancthon, Holbein.....born.

The next list is of dates B. C. and A. D. 2000 years apart:

B. C. 776: First authentic date.
A. D. 1224: Naples University founded.

B. C. 556: Persians conquered Medes.
A. D. 1444: Battle of Varna.

B. C. 551: Confucius .....born.
A. D. 1449: Ghirlandajo ..... born.

B. C. 512: Phrynicus .....born.
A. D. 1488: Raimondi, Von Hutten.....born.

B. C. 509: Themistocles .....born.
A. D. 1491: Loyola, Bucer, Folengo.....born.

B. C. 454: Athens subdued Ægina.
A. D. 1546: Smalkaldic War began.

B. C. 404: Fall of Athens.
A. D. 1596: Fall of Cadiz.

B. C. 394: Lysippus, Alexis.....born.
A. D. 1606: Rembrandt, Corneille, Gerhardt....born.

B. C. 361: Dinarchus, Eumenes, Lysimachus...born.
A. D. 1639: Racine .....born.

B. C. 343: First Samnite War.
A. D. 1657: War, Denmark and Sweden.

B. C. 342: Menander .....born.
A. D. 1658: Peterborough .....born.

B. C. 327: Second Samnite War.
A. D. 1673: Battle of Khotin.

B. C. 318: Pyrrhus..... .....born.
A. D. 1682: Bottcher .....born.

B. C. 300. Antioch founded.
A. D. 1700: Battle of Narva.

B. C. 299: Callimachus .....born.
A. D. 1701: Graun, Boscovich, Hyder Ali.....born.

B. C. 247: Hannibal .....born.
A. D. 1753: Roscoe, Carnot, Bewick, Stanhope, Vergniaud, Dugald Stewart.....born.

B. C. 225: Gauls invaded Rome.
A. D. 1775: War of American Revolution.

B. C. 205: Æmilius .....born.
A. D. 1795: Havelock, Carlyle, Howitt, Keats, Sir Rowland Hill.....born.

B. C. 146: Carthage destroyed.
A. D. 1854: Crimean War.

The next list consists of dates of three figures, the first being a factor of the last two, and the quotient being one of the nine numerals:

B. C. 630: Erinna, Stesichorus.....born.
B. C. 624: Gautama (Buddha) .....born.
B. C. 612: Pisistratus .....born.
B. C. 530: Cleomenes .....born.
B. C. 520: Cincinnatus, Aristides.....born.
B. C. 510: Cimon .....born.
B. C. 436: Isocrates .....born.
B. C. 432: Lysander .....born.
B. C. 420: Isæus .....born.
B. C. 412: Diogenes .....born.
B. C. 408: Timoleon .....born.
B. C. 327: Second Samnite War.
B. C. 318. Pyrrhus .....born.
B. C. 312: Appian Way built.
B. C. 216: Battle of Cannæ.
B. C. 210: Polybius .....born.
A. D. 210: Longinus .....born.
214: Grist mills invented.
214: Marcus Aurelius Claudius.....born.

A. D. 306: London rebuilt.
324: Constantinople founded.
412: Proclus .....born.
436: Childeric I.....born.
530: Fortunatus .....born.
742: Charlemagne .....born.
756: Kingdom of Cordova founded.
763: Haroun al Raschid.....born.
840: Hucbald .....born.

The list here given consists of dates above 1000 A. D., the second figure being a factor of the last two, and the quotient being one of the nine numerals:

A. D. 1204: Latin Kingdom founded.
1206: Pisano .....born.
1212: Children's Crusade.
1214: Roger Bacon.....born.
1216: Kublai, Khan.....born.
1312: Orleans University founded.
1315: Battle of Morgarten.
1324: Wycliffe .....born.
1412: Stenography invented.
1420: Torquemada, John Wessel.....born.
1436: Ximenes .....born.
1510: The Spaniards conquered Cuba.
1515: Camera Obscura invented.
1520: "Field of Cloth of Gold."
1525: Battle of Pavia.
1530: Diet of Augsburg.

A. D. 1535: First English Bible printed.
1540: J. J. Scaliger, Brantome.....born.
1612: Butler, Leighton, Arnauld.....born.
1618: Thirty Years War began.
1624: Sobieski .....born.
1630: Barrow, Tillotson.....born.
1636: Harvard College founded.
1642: First public schools, U. S.
1714: Type-writer invented.
1721: Smollett, Akenside, Foote, Wm. Collins .....born.
1728: Goldsmith, Capt. Cook .....born.
1735: Stereotyping invented.
1742: Blücher ....born.
1749: Mirabeau, Goethe, Jenner, Fox, Laplace, Alfieri, Cimarosa, Vogler, Tippoo Saib.....born.
1756: Seven Years War began.
1763: Richter, Talma, Morland.....born.
1816: Gerstäcker, Smiles, Charlotte Bronte, Charlotte Cushman, Philip James Bailey .....born.
1824: Wilkie Collins, Alboni.....born.
1832: Bjornsen, Doré, Ferry, Edwin Arnold .....born.
1840: Stanley, Daudet, "Ouida".....born.
1848: German Empire established.
1856: Treaty of Paris.

In the following list the dates all contain four figures, the number formed by the last two being a multiple of that formed by the first two.

A. D. 1030: St. Bruno .....born.
1040: Rashi .....born.
1050: Peter the Hermit .....born.
1060: Bouillon .....born.
1070: Champeaux .....born.
1122: Concordat of Worms.
1224: Joinville .....born.
1236: Moors conquered Cordova.
1248: Cologne Cathedral commenced.
1260: Frauenlob .....born.
1272: End of Crusades.
1284: Battle of Meloria.
1365: Vienna University founded.
1378: Hardyng, Ghiberti.....born.
1391: Playing cards invented.
1428: Warwick .....born.
1442: Alfonso V. conquered Naples.
1470: Magellan .....born.
1484: Tyndale, Zwingli, J. S. Scaliger.....born.
1498: Moretto .....born.
1530: Diet of Augsburg.
1545: Council of Trent.
1560: Arminius, Crichton.....born.
1575: Guido, Böehmen .....born.
1590: Microscope invented.
1632: Battle of Lützen.

A.D. 1648: "Rump" Parliament.
1664: Queen Anne.....born.
1680: Cavalier, Astorga.....born.
1696: Marshal Saxe.....born.
1734: Romney, Mesmer.....born.
1751: Eldon, Sheridan, Voss.....born.
1768: Chateaubriand .....born.
1785: Wilkie, Napier, Grimm, Christopher North .....born.
1836: T. B. Aldrich, Parepa-Rosa, Almeda-Tameda .....born.
1854: Crimean War.
1872: Great Boston Fire.

Each of the following dates consist of four figures, the first two being a multiple of the last.

1402: Dunois .....born.
1602: Mazarin .....born.
1802: Hugo .....born.
1503: Wyatt .....born.
1803: Dumas .....born.
1604: Eliot .....born.
1005: Lanfranc .....born.
1505: Knox .....born.
1206: Pisano .....born.
1806: Kossuth .....born.
1608: Milton .....born.
1809: Tennyson .....born.

Camillus was born in 446 B. C. Reverse the figures and we have 644 B. C., the year of Thales' birth.

The following list consists of similar examples:

B. C. 219: Pacuvius .....born.
912: Lycurgus .....born.

116: Varro .....born.
611: Anaximander .....born.

406: Speusippus .....born.
604: Lâo-tsze .....born.

265: Nævius .....born.
562: Anacreon .....born.

155: Marius .....born.
551: Confucius .....born.

694: Sardanapalus .....born.
496: Hellanicus .....born.

384: Aristotle, Demosthenes.....born.
483: Ion .....born.

234: Cato (Major).....born.
432: Lysander .....born.

453: Cleon .....born.
354: Cassander .....born.

95: Lucretius, Cato.....born.
59: Livy .....born.

A. D. 51: Domitian .....born.
15: Vitellius .....born.

32: Otho, Nerva.....born.
23: Pliny the Elder.....born.

42: Britannicus .....born.
24: Burrus (Afranius).....born.

A. D. 43: Martialis .....born.
34: Perseus .....born.

96: Arrian .....born.
69: Polycarp .....born.

521: St. Columba.....born.
125: Apuleius .....born.

412: Proclus .....born.
214: Claudius (M. Aurelius).....born.

912: Otto the Great.....born.
219: Philiscus .....born.

483: Justinian the Great.....born.

384: Honorius .....born.

1211: Ibn Khallikan .....born.
1121: Frederick Barbarossa.....born.

1831: Sardou, Joachim, Tietjens.....born.
1381: Chartier .....born.

1541: Charron .....born.
1451: Vespucci .....born.

1741: Lavater .....born.
1471: Wolsey, Dürer.....born.

1841: Joaquin Miller.....born.
1481: Peruzzi .....born.

1651: Fenelon, Otway.....born.
1561: Bacon .....born.

1751: Eldon, Sheridan, Voss.....born.
1571: Kepler .....born.

In the first of the following lists the numerals 1, 2, 3, 4, are given in consecutive order for the first date, then the first figure is omitted in the second date, and

the next figure also, in the third date. In the second list the "3" is placed next after the "1" and the same figure left off the next dates, as before. In the third list the "4" is placed after the "1" and the first and second figures are omitted from the next dates as before.

A. D. 1234: Lully .....born.
234: Porphyrius .....born.
34: Perseus .....born.
1324: Wycliffe .....born.
324: Constantinople founded.
24: Burrus (Afranius).....born.
1423: Louis XI.....born.
423: Ricimer .....born.
23: Pliny the Elder.....born.

Among the curious features of chronology not already indicated, may be mentioned the following:

It is a singular fact that of the distinguished men of the sixteenth century, the following were born just a decade apart:

A. D. 1544: Tasso .....born.
1554: Hooker, Sir Philip Sidney.....born.
1564: Shakespeare, Galileo, Marlowe, Buxtorf .....born.
1574: Marston, Ben Jonson.....born.
1584: Selden, Massinger, Duchesne, Pym..born.
1594: Poussin, Hampden, Saint-Amant, Gustavus Adolphus .....born.

Each interval of ten years from 1749 to 1819 is also especially noted for births of noted persons—1769 and 1809 being among the most remarkable years in this respect in all history. This list is as follows:

A. D. 1749: Mirabeau, Goethe, Jenner, Fox, Laplace, Alfieri, Cimarosa, Vogler, Tippoo Saib .....born.

1759: Porson, Wilberforce, Pitt, Robespierre, Danton, Schiller, Burns...born.

1769: Napoleon, Wellington, Soult, Ney, Humboldt, Cuvier, Brunel, Castlereagh, Sir Thomas Lawrence, Mehemet Ali, Bourrienne, Sir John Malcolm .....born.

1779: Brougham, Oken, Allston, Oehlenschläger, Berzelius, Thomas Moore born.

1789: Overbeck, Neander, Daguerre, J. Fenimore Cooper, Horace Vernet.....born.

1799: Balzac, Poushkin, Dollinger, Vigny, Halévy, Finlay, Choate, Rothe, Tholuck .....born.

1809: Mendelssohn, Tennyson, Chopin, Lincoln, Holmes, Poe, Darwin, Gladstone, Proudhon, Ricasoli, Macculagh, Park Benjamin, Elizabeth Barrett Browning .....born.

1819: Ruskin, Lowell, Kingsley, George Eliot, Abt, Howe, Offenbach, Queen Victoria .....born.

In all the years of the world's history prior to the nineteenth century, no single year has brought into life more men destined to be distinguished in after time than the year 1632—100 years prior to that in which occurred the birth of Washington. In 1632 no less than twelve noted men were born—which record has not been eclipsed in any year of even the eighteenth century, so prolific of great men; and it is perhaps doubtful if the same statement will not apply to the nineteenth century also.

It is a remarkable fact in chronology that in not a single case, from the dawn of history until the beginning of the fifteenth century, has a man whom the world recognizes as great, been born in the first year of any century—which cannot be said of any other year in any century.

Another curious fact is that during the twenty-seven years prior to 15 B. C. not one distinguished individual was born—while in the twenty-seven years previous to the period just mentioned no less than thirteen characters of history first saw life, viz.: Tiberius (B. C. 42), Ovid (B. C. 43), Propertius (B. C. 50), Tibullus (B. C. 54), Livy (B. C. 59), Agrippa (B. C. 62), Strabo, Augustus (B. C. 63), Horace (B. C. 65), Gallus, Cleopatra (B. C. 69), Virgil, Maccenas (B. C. 70).

Another period prolific of great men's births is from A. D. 32 to 55, when were born no less than sixteen distinguished men—generally at intervals of two years, viz.: Otho, Nerva, Perseus, Quintilian, Josephus,

Agricola, Lucan, Titus, Martialis, Statius, Juvenal, Epictetus, Domitian, Plutarch, Trajan, and Tacitus.

Passing on 1,000 years we find that in the eight years ending in 1060 were born more men than during the same period in all previous time—and it is a curious fact that not for three and a half centuries afterward was this record equaled.

And still another period of like significance was during the dozen years ending in 1594, during which interval more distinguished men were born than during any period of the same length of time in the hundred years following, as well as throughout all previous history—which is a remarkable circumstance. Within this narrow compass of years were brought forth nearly a score and a half of renowned persons—among them being Luther, Raphael, Scaliger, Salmasius, Rabelais, Latimer, Coverdale, Sarto, Paracelsus, Correggio, Loyola, Raimondi, Duchesne, Pym, Barneveldt, Hobbes, Tyndale, Gassendi, Hampden, Gustavus Adolphus, and Hans Sachs.

During the twenty-three years ending in 1501 not a year elapsed in which did not occur the birth of some distinguished man. This record was not equaled in all previous history, nor for more than two centuries after 1501.

Of all the noted men of history Seneca and Galba were born the nearest to the beginning of the Christian era—one year after the birth of Christ, or 3 B. C. (Christ is now found to have been born in 4 B. C.), the next nearest being Claudius Tiberius (10 B. C.), and the next

Vespasian, who was born in 9 A. D. (There are 9 letters in the latter's name.) The interval between the date of Vespasian's birth and that of Alexander the Great (356 B. C.) corresponds with the number of days in a year. The same interval also exists between the date of Thucydides' birth (471 B. C.) and that of Pompey and Cicero (106 B. C.)—also between that of Xenophon (430 B. C.) and Horace (65 B. C.).

The number of days in a year corresponds with the year A. D. in which the Roman poet Claudianus was born. Double this number and we have 730, in which year was born Alcuin, the great English ecclesiastic. Add another 365 and we have 1095, the first year of the Crusades. To this add still another 365 and the result is 1460, which is the year of birth of the English scholar and poet, Skelton. Add to this yet one more 365 and we have 1825, in which year the distinguished scientist Huxley was born.

To the number of weeks in a year prefix a "1" and annex a cipher, and we have the year in which was born Goujon, the most distinguished French sculptor of the sixteenth century. Add to this date the number of weeks in a year and we have 1572, in which year was born the noted Dutch diplomatist Aarssens. Another 52 years brings us to 1624, when the great Polish king Sobieski was born. Fifty-two years more and we have the year when the great English Prime Minister, Sir Robert Walpole, first saw life (1676). Advancing another 52 years brings us to 1728, the year of Goldsmith's birth. The same period added again and we

have 1780—in which year were born Béranger, the national song writer of France, and Audubon, the distinguished American ornithologist. Yet one more 52 years brings us to the year when the celebrated French painter Gustave Doré was born (1832), which was just a century after the year of Washington's birth.

Sulla's birth occurred in 138 B. C.; that of Alexander the Great in 356 B. C. Hannibal was born just half way between those dates, or 247 B. C. Reverse the figures in the last date and we have the year of Charlemagne's birth—742. The intervals between the births of Cæsar, the great Hunnish conqueror Attila, and the distinguished Roman emperor Otto the Great, are the same (B. C. 100, A. D. 406, and 912). Belisarius, the Byzantine conqueror, Saladin, the great Moslem general, and Napoleon, were born at equal intervals apart (505, 1137, and 1769). The same may be said of Clovis and Charlemagne, the renowned French kings, and the great Danish ruler Hardicanute, who were born, respectively, in 466, 742 and 1018. The interval between the year of birth of Sallust, the distinguished Roman historian, and Clovis, is the same as that between the latter's and Hardicanute's (Sallust having been born in 86 B. C.), as is also the interval between the date of Sallust's birth and that of Solon, the noted Athenian law-giver, the date of the latter's birth being 638 B. C. Mohammed, William the Conqueror, and Luther, were born in 571, 1027 and 1483 respectively, the interval in each case being 456, the figures forming that number being in ascending order. The celebrated

Greek philosopher Epicurus was born in 341 B. C., between which date and that of Mohammed's birth the same period elapsed as between Mohammed's and Luther's.

Magna Charta was signed in 1215: Queen Victoria was born in 1819. The Reformation occurred half way between those periods, in 1517. The U. S. Declaration of Independence was in 1776, the battle of Waterloo in 1815, and the Crimean War in 1854. It will be noticed that the interval between the second-mentioned event and each of the others is the same—39 years. The last battle of the American Revolution (Yorktown) was fought in 1781, the second war with England ended in 1814, and the war with Mexico in 1847. The interval is the same in each case—33 years. Add a cipher to the number of weeks in a year and we have the date of Cincinnatus' birth (520 B. C.), which is 1000 years before that of Narses, 1500 years before Avicenna's, and 2000 years before that of Sir Thomas More (1408). Subtract the number of weeks in a year from the date of Cincinnatus' birth and we have the year in which Socrates was born (468 B. C.). These figures are even and equal intervals apart. Theophrastus, the successor of Aristotle, was born 100 years later; and Marcellus, the distinguished Roman warrior and consul, a hundred years later still—which latter was 2000 years before the birth of Washington (1732). One year before the latter date occurred the birth of Cowper, a century earlier was born Dryden, and two centuries earlier still, Joan of Arc was burned at the stake (1431).

St. Benedict was born in 481 (1000 years after Cratinus), and Nestor half way between St. Benedict and Dryden—1056.

By the date of Washington's birth may that of the battle of Lützen be recalled, which was fought 100 years before—the conquest of Peru by Pizarro, which happened 200 years before (1532)—also the celebrated battle of Tours, which occurred 1000 years before (732). Ten years after the battle of Tours Charlemagne was born, and 1000 years later, Blücher (1742).

What a curious train of events is the following:

In 1616 Shakespeare and Cervantes died; two years later was the beginning of the Thirty Years War; two years later still, occurred the landing of the Mayflower; in two years more Molière was born, Sobieski two years later, Madame Sévigné in another two years, Bunyan two years later; in the next two years, Barrow, and Locke two years later (1632)—which was just a century before the birth of Washington.

If we wish to know the date of Shakespeare's birth we have only to subtract from the date of his death (1616) a number corresponding to the number of weeks in a year. In the date first given (1616), it will be noticed that the last two figures are a repetition of the first two. The square root of 16 is 4; thus the figure 4 may be used as the basis for recollecting the above train of events.

As we have just seen, the number 16 repeated (1616) indicates the year of Shakespeare's death. If we take the next higher number repeated (1717) and

add to it a number equal to the number of weeks in a year, it will give the year of Napoleon's birth (1769) —it being a curious coincidence that in the same year were also born his two great field marshals, Soult and Ney, and also his great rival, Wellington. If we add still another 52 to the above number (or add to 1769 the difference between the "17" and the "69"), we have the year of Napoleon's death—Shakespeare and Napoleon having each lived to the age of 52 years. Napoleon was born 6 years before the American Revolution, and died 6 years after the battle of Waterloo —in 1821. Subtract from this last date a number corresponding to the number of days in a year, and the remainder is 1456—the last three figures of which are in ascending order. 14 is also one-fourth of 56. If we take the "4" and place it after the "6," we have the year of Shakespeare's birth (1564).

The three highest numerals, in ascending order, preceded by the lowest numeral, indicate the date of the French Revolution (1789). That event occurred just a century before the Brazilian Revolution—the turbulent character of the former contrasting with the peaceful nature of the latter. Byron's birth happened in the year before the French Revolution. Pope was born a century earlier, which, in turn, was a century after the destruction of the "Invincible" Armada (1588).

The cube of 4 is 64. In that year Nero burned Rome. 1500 years later occurred the birth of Shakespeare.

The cube of 5 is 125. In that year the great Latin romance writer Apuleius was born. Nicole, the great French scholar, was born 1500 years later.

The cube of 6 is 216. In that year the Parthian king Artabanus invaded Syria. Garrick and Gray were born 1500 years afterward.

The cube of 10 is 1000. In that year was born Ferdinand the Great.

The cube of 11 is 1331. Cannon were first used at that time.

The cube of 12 is 1728. In that year Goldsmith and Captain Cook were born. There are 1728 cubic inches in a cubic foot.

In 31 B. C. occurred the great naval battle of Actium. The square of 31 is 961. In 961 B. C. Homer's "Iliad" first appeared.

Rome was founded in 753 B. C. Those figures are all odd and the intervals between them equal.

And now that virtually all of the important events of history have been indicated, together with their corresponding dates, each date being associated either with one or more other dates, or with some peculiarity possessed by itself—a few words as to the practical way to memorize any desired date in history.

In the first place, carefully associate the figures in a date with each other, by one of the methods indicated in Chapter 10, until the whole is clearly inscribed on the mental vision. Then look at the list of dates at the end of this chapter and turn to the page or pages referred to in said list, wherein the date to be memo-

rized is preserved by one or more forms of association, and if there be a choice, select such association as will be the most easily retained in the memory; if the event be associated in more than one way its security of retention is thereby increased, provided the association be thorough in each case. If the date to be memorized, instead of being one which represents an event of historical importance, is related to simply an occurrence of personal experience, the best plan would be to associate it with some important or impressive event which happened in the same year whose date would be reasonably certain of preservation in the memory. Should no such event suggest itself at the time, the next best plan would be to link the occurrence with some historical event which took place a century before. For the latter purpose a list of events of more or less importance which happened in each year from 1800 to 1822 is here given:

A. D. 1800: Macaulay and Bancroft.....born.
1801: Battle of Copenhagen.
1802: Hugo and Dumas.....born.
1803: Ewald and Emerson.....born.
1804: Hawthorne and Sue.....born.
1805: Battle of Trafalgar.
1806: Kossuth and J. S. Mill.....born.
1807: Longfellow and Whittier.....born.
1808: Balfe and Malibran.....born.
1809: Lincoln and Gladstone.....born.
1810: Cavour and Reuter.....born.

A. D. 1811: Thackeray and Liszt.....born.
1812: Dickens and Browning.....born.
1813: Wagner and Lepsius.....born.
1814: Bismarck and Verdi.....born.
1815: Battle of Waterloo.
1816: Charlotte Bronte .....born.
1817: Thoreau and Armitage.....born.
1818: Gounod and Froude.....born.
1819: Ruskin and Lowell.....born.
1820: Tyndall and Spencer.....born.
1821: Buckle and Mariette.....born.
1822: Gen. Grant.....born.

In case it is desired to preserve in the memory the month and day on which an event occurred, it is suggested that the number of the month be first memorized, then the day, and that the two be associated together, by rules given in Chapter 10. If the day is on or near any familiar date—such as a birthday or a holiday—it becomes all the easier to recollect; or if it is either the first or last day of a month, or some day representing a number divisible by 5, or a prime number, the memory is thereby materially assisted.

The fact is, that Association, if properly applied, is fully as effective an aid in memorizing dates, as facts, events, or ideas—for the element of the mathematical relation of figures to each other is introduced, as also other features of comparison and contrast that cannot be used in other forms of association, and they fully equal whatever points of excellence the latter

may possess. The practice of associating the figures in a date with each other, and the whole with other dates, will so train the eye that many a date may ultimately become so vividly impressed on the visual memory at first sight that it will never escape, but become a permanent possession.

As proficiency in this department of memory culture increases, the forming of associations between dates becomes more and more an unconscious effort of the mind, and a date is memorized not only far more easily, but far more surely than before—thus demonstrating that in this as in other departments of memory culture the power of the *unconscious* memory may be increased to a wonderful degree; and when so developed its possessor will in after years find himself recompensed many fold for all the time and effort bestowed on its cultivation.

INDEX TO CHAPTER XI.

HISTORICAL CHARACTERS.

[All dates are A. D., except where otherwise indicated.]

Name.	Year of Birth.	Page.
Aarssens	1572	234, 248, 280
Abauzit	1679	240, 254
Abelard	1079	252
Abernethy	1764	239
Abdallatif	1162	254
Abrabanel	1437	233, 267
Abt	1819	216
Abulfaragius	1226	247, 255
Abulfeda	1273	255
Acciajuoli	1428	233
Accorso	1182	254
Acidalius	1567	234
Acilius	B. C. 227	223
Acosta	1539	225, 236, 264
Adamnan	625	260
Addison	1672	261
Adelaar	1622	260
Æmilius	B. C. 205	219, 229, 269
Æschines	B. C. 389	219
Æschylus	B. C. 525	208, 214, 228
Æsop	B. C. 620	226, 227, 229
Ætius	399	221, 266
Agassiz	1807	210, 242
Agatharcides	B. C. 151	214, 266
Agathias	536	250, 260
Ageladas	B. C. 544	222, 227
Agesilaus	B. C. 481	221
Agricola	37	263
Agrippa	B. C. 62	231
Ainsworth	1560	234
Akbar	1542	236
Akenside	1721	243, 271
Alabaster	1567	234

Name.	Year of Birth.	Page.
Alaric	376	265
Alasco	1499	248
Albani	1578	226, 247
Albategni	852	232
Alberoni	1664	239
Alberti	1404	232
Albertus Magnus	1193	246
Alboni	1824	256, 271
Albumazar	805	262
Albuquerque	1453	224
Alcæus	B. C. 620	226, 227, 229
Alcibiades	B. C. 450	228, 229
Alcman	B. C. 695	222
Alcuin	730	249, 261, 280
Aldhelm	656	215, 261
Aldrich	1836	256, 273
Aldrovandi	1522	225
Alexander	B. C. 356	228, 280, 281
Alexis	B. C. 394	268
Alfieri	1749	255, 271
Alford	1810	242
Alfred the Great	849	266
Algazali	1059	252
Ali Pasha	1741	245
Allegri	1580	247
Alleyn	1566	217
Allori	1577	234, 248
Allston	1779	240
Al-Mamun	786	262
Almansor	939	232
Almeda-Tameda	1836	256, 273
Almqvist	1793	241
Alp-Arslan	1029	252
Alphonsus	1396	259
Alpini	1553	236
Alva	1508	248
Alvarez	1768	239
Amadeus the Great	1249	255
Ambrose (St.)	340	258
Amontons	1663	239
Ampère	1775	262
Amyot	1513	235
Amyraut	1596	264
Anacreon	B. C. 562	231, 274
Anaxagoras	B. C. 500	213
Anaximander	B. C. 611	266, 274
Anaximenes	B. C. 606	214, 226, 231
Andersen (Hans C.)	1805	262
Andocides	B. C. 466	221
Andrea	1275	232
Andronicus	1111	215
Angelo	1475	208, 259
Anglesey	1768	239
Anne (Queen)	1664	239, 273

Name.	Year of Birth.	Page.
Anselm	1033	252
Anson	1697	237
Anthony (St.)	252	220
Antiochus the Great	B. C. 237	266
Antiphon	B. C. 480	221, 230
Antisthenes	B. C. 425	208, 228
Antoinette (Marie)	1755	238
Antoninus	121	209, 214, 219, 257
Antony	B. C. 83	231
Antony the Monk	252	220
Apelles	B. C. 332	228
Apollinaris Sidonius	430	221
Apollodorus	60	257
Apollonius	B. C. 249	229
Apuleius	125	231, 285
Aquila	1466	217
Aquinas	1227	246
Arago	1786	262
Aratus	B. C. 271	230
Arbuthnot	1667	239
Arcesilaus	B. C. 316	220, 230
Archimedes	B. C. 287	220, 229
Areson	1484	234
Argensola	1565	218, 234
Ariosto	1474	234
Aristides	B. C. 520	225, 227, 228, 269
Aristophranes	B. C. 448	224
Aristotle	B. C. 384	207, 220, 228, 274
Arius	256	264
Arkwright	1732	237
Arminius	1560	234, 272
Armitage	1817	217, 243
Arnaud	1641	235, 236, 271
Arnauld	1612	235, 271
Arndt	1555	225
Arne	1704	237, 241
Arnold (Edwin)	1832	256, 271
Arnold (Matthew)	1822	263
Arnott	1788	255
Arrian	96	264, 275
Artedi	1705	237
Ascham	1515	216, 235
Ashburton	1774	239
Asinius Pollio	B. C. 76	218, 230
Asmai	740	261
Asselyn	1610	235
Ast	1778	239
Astorga	1680	254, 261, 273
Astruc	1684	240
Athanasius	297	264
Athenagoras	140	219
Athelstane	895	208, 251
Atterbom	1790	256
Atterbury	1662	254

Name.	Year of Birth.	Page.
Atticus	B. C. 109	267
Attila	406	221, 259, 281
Auber	1784	240
Audubon	1780	227, 281
Augereau	1757	238
Augustine (St.)	354	220, 258
Augustus	B. C. 63	267
Ausonius	310	219
Austen (Jane)	1775	262
Aventinus	1466	217
Averrhoes	1126	253
Avicenna	980	249, 251, 282
Azeglio	1798	241
Baader	1765	218, 264
Baber	1483	209, 234
Bach	1685	240
Bacon (Francis)	1561	264, 275
Bacon (Roger)	1214	258, 270
Baggesen	1765	218, 264
Bagration	1765	218, 264
Bailey (Philip James)	1816	243, 271
Baillie (Joanna)	1762	248
Bajazet	1347	232, 258
Baker	1821	243
Baldi	1533	233, 252
Baldovinetti	1422	224
Bales	1547	264
Balfe	1808	263
Ballanche	1776	262
Balzac	1799	262
Bancroft	1800	213
Banim	1798	241
Baratynski	1792	241
Barbarossa (Frederick)	1121	257, 275
Barbour	1316	232, 258
Barclay	1648	238
Barneveldt	1586	236
Baronius	1538	236
Barri	1147	253
Barrow	1630	236, 271, 283
Barthélemy	1716	217, 243
Barthez	1734	244
Bartholinus	1585	235
Bartolus	1314	258
Basil the Great	330	246, 265
Bastiat	1801	241
Batuta (Ibn)	1304	232
Baur	1792	241
Baxter	1615	217, 235
Bayard	1475	259
Bayle	1647	253
Beattie	1735	244
Beaton	1494	251

INDEX TO CHAPTER XI.

Name.	Year of Birth.	Page.
Beaumarchais	1732	237
Beaumont	1585	235
Beccafumi	1488	225
Becket	1118	209, 253
Bede, The Venerable	672	261
Beecher	1813	242
Beethoven	1770	255
Belisarius	505	215, 260, 266, 281
Bellarmine	1542	236
Bellini	1802	262
Bellman	1740	237, 261
Benedict (St.)	481	221, 283
Benedict (Sir Julius)	1804	241
Beneke	1798	241
Bengel	1687	240
Benjamin	1809	242
Bentham	1748	238
Bentley	1662	254
Béranger	1780	227, 281
Berengarius	998	252
Berkeley	1685	240
Berlioz	1803	241
Bernadotte	1764	239
Bernard (St.)	1091	253
Bernardin (St.)	1380	247
Bernhardt, Sarah	1850	245
Berni	1490	251
Berosus	B. C. 304	220
Berzelius	1779	240
Bessarion	1635	236, 253
Betterton	1395	251
Bewick	1753	238, 268
Beza	1519	225
Bichat	1771	262
Bierstadt	1828	244
Bishop	1786	262
Bismarck	1814	242
Bjornsen	1832	256, 271
Blackstone	1723	237, 243
Blaine	1830	244
Blake (Robert)	1598	253
Blake (William)	1757	238
Blücher	1742	245, 261, 271, 283
Blumenbach	1752	261
Boccaccio	1313	216, 258
Boccherini	1740	237, 261
Bochart	1599	253
Bodin	1530	236, 260
Boece	1465	234
Boeckh	1785	240
Böehmen	1575	252, 260, 272
Boerhaave	1668	239
Boetius	475	259

Name.	Year of Birth.	Page.
Bohaddin	1145	246
Boiardo	1434	259
Boieldieu	1775	262
Boileau	1636	237
Bolingbroke	1678	239
Bolivar	1783	240
Bologne	1524	236
Bonaventura	1221	215, 249
Bonheur, Rosa	1822	263
Boniface (St.)	680	261
Bonnet	1720	243
Boone	1735	244
Booth (Edwin)	1833	244
Bopp	1791	240
Borrow	1803	241
Boscovich	1701	241, 268
Bossuet	1627	236
Boswell	1740	237, 261
Bottcher	1682	240, 254, 268
Botticelli	1447	232
Bouflers	1644	226, 236
Bouillon	1060	257, 272
Bourignon	1616	216
Bourdaloue	1632	237
Bourrienne	1769	248
Bowles	1762	248
Bowring	1792	241
Boyle (Robert)	1627	236
Boyle (Richard)	1566	217
Bozzarris	1790	256
Braham	1774	239
Brahe	1546	233
Brahms	1833	244
Brainerd	1718	216, 243
Bramante	1444	233
Brantome	1540	233, 271
Brasidas	B. C. 456	228
Bremer	1801	241
Bretschneider	1776	262
Bright	1811	242
Britannicus	42	218, 274
Broglie	1785	240
Bronte, Charlotte	1816	243, 271
Brougham	1779	240
Brown, John	1800	213
Browning (Robert)	1812	242
Browning (Elizabeth Barrett)	1809	242
Bruce	1274	258
Brucker	1696	241
Brunel	1769	248
Brunelleschi	1377	224
Bruno	1548	264
Bruno (St.)	1030	249, 272

Name.	Year of Birth.	Page.
Bryant (W. C.)	1794	241
Bucer	1491	259, 268
Buchanan	1506	248
Buckingham	1592	235
Buckle	1821	243
Buddha (Gautama)	B. C. 624	265, 269
Buffier	1661	239
Buffon	1707	210, 242
Bull, Ole	1810	242
Bulwer	1805	262
Bunsen	1791	240
Bunyan	1628	226, 283
Burckhardt	1784	240
Burdett	1770	255
Bürger	1748	238
Burke	1729	237, 244
Burnet	1643	238
Burns	1759	238
Burritt	1811	242
Burrus (Afranius)	24	274, 276
Burton (Robert)	1576	225
Burton (Sir Richard)	1821	243
Butler (Samuel)	1612	235, 271
Butler (Bishop)	1692	241
Buxtorf	1564	247
Byron	1788	255, 284
Cabot	1476	247
Cædmon	622	260
Cæsalpinus	1519	225
Cæsar	B. C. 100	213, 281
Cagliostro	1743	238
Calderon	1600	213
Calderwood	1575	252, 260
Calhoun	1782	240
Callimachus	B. C. 299	229, 268
Calvin	1509	235, 263
Camden	1551	215, 233, 264
Camerarius	1500	213
Camillus	B. C. 446	228, 274
Camoens	1524	236
Campanella	1568	234
Campbell	1777	215, 248
Camuccini	1775	262
Canning	1770	255
Canova	1757	238
Canute	995	208, 222
Capet	939	215, 232
Capgrave	1393	246
Caracalla	188	219
Cardan	1501	233
Carey	1762	248
Carlyle	1795	269

Name.	Year of Birth.	Page.
Carlstadt	1480	251
Carneades	B. C. 213	219
Carnot	1753	238, 268
Carolan	1670	254
Carpini	1180	254
Carracci	1555	215, 225
Casaubon	1559	252
Cassander	B. C. 354	220, 228, 274
Cassianus	360	220
Cassiodorus	468	221
Castelnau	1520	225
Castillejo	1494	251
Castlereagh	1769	248
Catherine (St.)	1347	232, 258
Cato (Major)	B. C. 234	219, 274
Cato	B. C. 95	274
Cats	1577	234, 248
Catullus	B. C. 94	267
Cavalier	1680	254, 261, 273
Cavendish	1731	244, 255
Cavour	1810	242
Caxton	1422	224
Cellini	1500	213
Cervantes	1547	264
Chalmers	1780	227
Champeaux	1070	252, 272
Champollion	1790	256
Channing	1780	227
Chantrey	1781	240
Chapman	1559	252
Charlemagne	742	261, 270, 281, 283
Charles V.	1500	213
Charron	1541	236, 275
Chartier	1381	224, 275
Chastelain	1403	233
Chateaubriand	1768	239, 273
Chatham	1708	248
Chatterton	1752	261
Chaucer	1340	232, 249, 258
Cherubini	1760	239
Chesterfield	1694	241, 254
Chiabrera	1552	234
Childeric I.	436	259, 270
Choate	1799	262
Chopin	1809	242
Christina	1626	253
Chrysippus	B. C. 280	223, 230
Chrysoloras	1355	232
Chrysostom	347	258
Churchill	1731	244, 255
Churchyard	1520	225
Cibber	1671	236
Cicero	B. C. 106	219, 231, 280
Cid	1034	257

Name.	Year of Birth.	Page.
Cimabue	1240	232
Cimarosa	1749	255, 271
Cimon	B. C. 510	231, 266, 269
Cincinnatus	B. C. 520	225, 227, 228, 269, 282
Cino	1270	223, 255
Clarendon	1608	226
Clarke (Adam)	1762	248
Clarke (Samuel)	1675	254
Claude of Lorraine	1600	213
Claudianus	365	258, 280
Claudius (Tiberius)	B. C. 10	231, 279
Claudius (M. Aurelius)	214	258, 269, 275
Clay	1777	215, 248
Cleanthes	B. C. 300	213
Clemens (S. L.)	1835	244
Clementi	1752	261
Cleomenes	B. C. 530	227, 269
Cleon	B. C. 453	224, 265, 274
Cleopatra	B. C. 69	218
Clive	1725	261
Clovis	466	221, 281
Cobbett	1762	248
Cobden	1804	241
Cœur	1396	259
Coke	1552	234
Colbert	1619	253
Coleridge	1772	248
Colet	1466	217
Collins (Wm.)	1720	243
Collins (Wilkie)	1824	256, 271
Colonna	1490	251
Columba (St.)	521	260, 275
Columbanus	550	222
Columbus	1446	233, 267
Comines	1445	224
Comte	1798	241
Condé	1621	235
Condillac	1715	243
Condorcet	1743	238
Confucius	B. C. 551	227, 268, 274
Congreve	1670	254
Constantine	274	258
Cook (Capt.)	1728	244, 271, 285
Cooper	1789	240
Copernicus	1473	225, 234
Coppeé	1842	245
Corelli	1653	236, 238
Corneille	1606	226, 268
Corot	1796	241
Correggio	1494	251
Cortez	1485	235
Cousin	1792	241
Coverdale	1488	225
Cowley	1618	253

Name.	Year of Birth.	Page.
Cowper	1731	244, 255, 282
Crabbe	1754	248
Cranach	1472	234
Cranmer	1489	248
Crashaw	1613	235
Crassus	B. C. 140	219
Cratinus	B. C. 519	225, 283
Crébillon	1674	239
Crichton	1560	234, 272
Crœsus	B. C. 590	227
Croly	1785	240
Cromwell	1599	253
Cruden	1700	213
Cruikshank	1792	241
Cudworth	1617	216, 235
Cujas	1520	225
Cullen	1710	242
Curran	1750	245
Cusa	1401	233
Cushman, Charlotte	1816	243, 271
Cuvier	1769	248
Cynewulf	725	261
Cyprian	200	213
Cyrus the Great	B. C. 576	225
Czerny	1791	240
Dagobert I.	600	213
Daguerre	1789	240
D'Aguesseau	1668	239
Dahlstjerna	1661	239
D'Alembert	1717	216, 242
Dalton	1766	217, 239
Damascenus	695	222
Damiani	990	249, 251, 266
Dampier	1652	253
Dante	1265	232, 258
Danton	1759	238
D'Anville	1697	237
Darling, Grace	1815	243
Darwin	1809	242
D'Aubigné	1794	241
Daudet	1840	271
David	1748	238
David (St.)	490	221
Davy	1778	239
De Beriot	1802	262
De Candolle	1778	239
Dee	1527	236
De Foe	1661	215, 239
Dekker	1577	234, 248
Delacroix	1798	241
Delaroche	1797	264
Delavigne	1793	241
Demetrius Phalereus	B. C. 346	228

Name.	Year of Birth.	Page.
Demetrius Poliorcetes	B. C. 335	228
Democritus	B. C. 460	228, 265, 266
Demosthenes	B. C. 384	207, 220, 228, 274
Denham	1615	217, 235
De Quincey	1785	240
Descartes	1596	264
Deschamps	1328	258
Desmoulins	1760	239
De Vigny	1797	264
De Witt	1625	260
Diamante	1400	213
Dickens	1812	210, 242
Diderot	1713	242
Didymus	314	258
Dillen	1687	240
Dinarchus	B. C. 361	268
Diocletian	245	220, 232
Diogenes	B. C. 412	221, 228, 230, 269
Dion	B. C. 408	228
Dionysius	B. C. 430	221, 229
D'Israeli	1804	241
Dobell	1824	256
Doddridge	1702	237
Dolomieu	1750	245
Domenichino	1581	234
Dominic (St.)	1170	254
Domitian	51	264, 274
Donatello	1386	251
Donizetti	1798	241
Donne	1573	234
Doré	1832	256, 271, 281
Doria	1466	217
Douglas	1474	234
Draco	B. C. 650	229
Drake	1545	264
Drummond	1585	235
Dryden	1631	247, 282
Dubos	1670	254
Ducange	1610	235
Duchesne	1584	234
Dudevant (Mme.)	1804	241
Dugueschin	1314	258
Dumas	1802	262, 273
Dumouriez	1739	244
Dunbar	1460	234
Dunois	1402	224, 273
Duns Scotus	1265	232, 258
Dunstan	925	232
Duquesne	1610	235
Durandus	1237	255
Durante	1684	240
Dürer	1471	251, 275
Dyce	1806	263
Dyer	1699	248

Name.	Year of Birth.	Page.
Eastlake	1793	241
Eberhard	1445	224
Eccard	1553	236
Eccelino	1194	254
Eck	1486	247
Edgeworth, Maria	1767	239
Edison	1847	245
Edmund (St.)	1189	250
Edrisi	1099	253
Edward the Confessor	1004	252
Edwards	1703	241
Egbert	775	208, 262
Eginhard	771	262
Egmont	1522	225
Eldon	1751	238, 273, 275
Eleanor of Aquitaine	1122	249
Elias Levita	1472	234
Eliot (John)	1604	226, 237, 273
Eliot (George)	1819	216
Elizabeth (Queen)	1533	233, 252
Elmacin	1223	246
Elphinstone	1431	247
Emerson	1803	241
Emmanuel the Great	1469	233
Empedocles	B. C. 490	221, 227
Encina	1468	234
Encke	1791	240
Ennius	B. C. 238	229, 230
Epaminondas	B. C. 422	221, 224
Epicharmus	B. C. 540	227
Epictetus	48	264
Epicurus	B. C. 341	220, 228, 282
Epimenides	B. C. 628	226
Epiphanius (St.)	304	220
Episcopius	1582	226
Erasmus	1467	234
Erastus	1524	236
Eratosthenes	B. C. 276	223, 230, 267
Eric the Red	945	246
Erigena	802	262
Erinna	B. C. 630	227, 229, 269
Ernesti	1707	242
Ernst	1814	242
Ersch	1766	217, 239
Erskine	1750	245
Esarhaddon	B. C. 705	227
Espinel	1551	233, 264
Estienne	1503	233
Etty	1787	240
Euclid	B. C. 323	214
Eudoxus	B. C. 399	221, 229
Eugene of Savoy	1663	239
Euler	1707	242
Eumenes	B. C. 361	268
Eupolis	B. C. 445	224, 230

Name.	Year of Birth.	Page.
Euripides	B. C. 480	221, 230
Eusebius	265	220, 258, 264
Evagrius	536	250, 260
Evans, Marian	1819	216
Evelyn	1620	226, 264
Everett	1794	241
Ewald	1803	241
Faber, Cecilia	1797	264
Fabius	B. C. 270	223
Fabricius	1668	239
Fahrenheit	1686	236
Fairfax	1611	235
Fairhair, Harold	850	246
Falconer	1732	237
Faraday	1791	240
Farinelli	1705	237
Farnese	1546	233
Farquhar	1678	239
Fauriel	1772	248
Fénelon	1651	238, 275
Ferdinand the Great	1000	213, 285
Ferid-Eddin-Athar	1119	253
Ferishta	1570	234, 252
Ferrar	1593	235
Ferrari	1484	234
Ferry	1832	256, 271
Fichte	1762	248
Ficino	1433	233
Fielding	1707	242
Fiesole	1387	247
Filelfo	1398	233
Filicaja	1642	236
Finlay	1799	262
Firdousi	941	246
Fischart	1546	233
Flacius	1520	225
Flamininus	B. C. 228	223
Flaxman	1755	238
Fléchier	1632	237
Fleming	1609	235
Fletcher	1579	252
Fleury	1640	237
Fliedner	1800	213
Flotow	1812	242
Folengo	1491	259, 268
Fontenelle	1657	238, 254
Foote	1721	243, 271
Ford	1586	236
Forrest	1806	263
Fortunatus	530	260, 270
Foscari	1372	224
Foster	1770	255
Fouché	1763	239, 262
Fouqué	1777	215, 248

Name.	Year of Birth.	Page.
Fourier	1772	248
Fox	1749	255, 271
Foxe	1517	235, 252
Francis (St.)	1182	254, 266
Franklin (Benjamin)	1706	248
Franklin (Sir John)	1786	262
Frauenlob	1260	232, 272
Frederick the Great	1712	242
Fréret	1688	236
Frisi	1728	244
Frobisher	1535	236
Froebel	1782	240
Froissart	1337	256
Froude	1818	216, 243
Fuller	1608	226
Fulton	1765	218, 264
Fuseli	1741	245
Fux	1661	239
Gainsborough	1727	244
Galba	B. C. 3	267, 279
Galen	130	246
Galileo	1564	247
Gallatin	1761	239
Gallus	B. C. 69	218
Galvani	1737	255
Gama	1460	234
Gardiner	1483	234
Garibaldi	1807	242
Garrick	1716	217, 243, 285
Garrison	1804	241
Gascoigne	1535	236
Gassendi	1592	235
Gauss	1777	215, 248
Gautama (Buddha)	B. C. 624	265, 269
Gautier	1811	242
Gay	1688	236
Gay-Lussac	1778	239
Geddes	1737	255
Geijer	1783	240
Geminiani	1666	215, 239
Genevieve (St.)	422	221
Genseric	406	221, 259
Gentili	1552	234
Geoffrey of Monmouth	1100	213
Gerard of Cremona	1114	250
Gerhardt	1606	226, 268
Germanicus	B. C. 15	218
Gerson	1363	246
Gersonides	1288	255
Gerstäcker	1816	243, 271
Gervaise	1152	253
Gervinus	1805	262
Gesenius	1786	262
Gesner	1516	260

Name.	Year of Birth.	Page.
Geulincx	1625	260
Ghiberti	1378	247, 272
Ghirlandajo	1449	268
Giannone	1676	247
Gibbon	1737	255
Gibbons	1583	234, 260
Gibson	1790	256
Gieseler	1792	241
Gilbert, Wm	1540	233
Gildas	516	260
Gillray	1757	238
Gioberti	1801	241
Giorgione	1477	234
Giotto	1276	223
Giraldi	1479	225
Gladstone	1809	242
Glendower	1354	258
Glinka	1804	241
Gluck	1714	242
Godwin	1756	264
Godwine	994	251
Goethe	1749	255, 271
Goldoni	1707	242
Goldsmith	1728	244, 271, 280, 285
Gonzalo	1453	224
Gottschalk	1829	244
Goudimel	1510	235
Goujon	1520	225, 280
Gounod	1818	216, 243
Gower	1325	247, 249
Goya	1746	238
Gozzoli	1420	224
Gracchus	B. C. 188	219
Grævius	1632	237
Grant, Gen	1822	263
Granvella	1517	252
Grattan	1746	238
Graun	1701	241, 268
Gray, Thomas	1716	217, 243, 285
Greeley	1811	242
Gregory of Tours	544	222
Gresset	1709	242
Grétry	1741	245
Grillparzer	1791	240
Grimm	1785	240, 273
Gringoire	1480	251
Grisi	1812	242
Groot	1340	232, 249, 258
Grosseteste	1175	254
Grote	1794	241
Grotefend	1775	262
Grotius	1583	234, 260
Guarini	1537	233, 263
Guercino	1592	235

Name.	Year of Birth.	Page.
Guibert	1053	257
Guicciardini	1483	234
Guido	1575	252, 260, 272
Guizot	1787	240
Gustavus Adolphus	1594	253
Gutenberg	1400	213
Haco	920	251
Hadrian	76	218
Hafiz	1300	213
Hahnemann	1755	238
Hakluyt	1553	236
Hale	1609	235
Halévy	1799	262
Hall, Robert	1764	239
Hallam	1778	239
Haller	1708	248
Halley	1656	261
Hamilton (Alexander)	1757	238
Hamilton (Sir William)	1788	255
Hampden	1594	253
Handel	1685	240
Hannibal	B. C. 247	268, 281
Hardicanute	1018	209, 252, 281
Hardwicke	1691	240, 254
Hardyng	1378	247, 272
Hariri	1054	252
Harold Fairhair	850	246
Harold II.	1022	246
Haroun al Raschid	763	262, 266, 270
Harte, Bret	1839	244
Hartley	1705	237
Harvey	1578	226, 247
Hastings	1732	237
Havelock	1795	269
Hawthorne	1804	241
Haydn	1732	237
Hazlitt	1778	239
Hecatæus	B. C. 550	222
Heem	1604	226, 237
Hegel	1770	255
Heine	1797	213, 264
Hellanicus	B. C. 496	225, 228, 274
Helps	1813	242
Helvetius	1715	243
Hemans, Felicia	1793	241
Hennepin	1640	237
Henryson	1425	233
Heraclides	B. C. 381	224
Heraclitus	B. C. 535	214, 227
Heraclius	575	208, 215, 260
Herbart	1776	262
Herder	1744	245
Hermippus	B. C. 245	220, 230

Name.	Year of Birth.	Page.
Herodotus	B. C. 484	207, 214, 228
Herrick	1591	253
Herschel	1738	244
Hesiod	B. C. 892	222
Heyne	1729	237, 244
Hilary	287	220
Hilda (St.)	614	250
Hildebert	1055	257
Hildegard	1098	253
Hill, Sir Rowland	1795	269
Hincmar	806	263, 266
Hipparchus	B. C. 552	230
Hippocrates	B. C. 460	228, 265, 266
Hobbema	1638	226, 236
Hobbes	1588	236
Hofer	1767	239
Hogarth	1697	237
Hogg	1772	248
Holbein	1497	225, 267
Holberg	1684	240
Holmes	1809	242
Homer	B. C. 995	222, 230
Honorius	384	220, 275
Hooch	1632	237
Hood	1798	241
Hooft	1581	234
Hook	1788	255
Hooker	1554	248, 252
Horace	B. C. 65	230, 266, 280
Hortensius	B. C. 114	229
Hosius	256	264
Hotman	1524	236
Howard	1726	243, 255
Howe	1819	216
Howitt	1795	269
Hrabanus	776	262
Hrosvitha	935	251, 266
Hucbald	840	270
Huet	1630	236
Hugh (St.)	1135	253
Hugo	1802	262, 273
Humboldt	1769	248
Hume	1711	242, 255
Hummel	1778	239
Hunt, Leigh	1784	240
Hunter	1728	244
Huss	1369	209, 233
Hutcheson	1694	241, 254
Hutten (Von)	1488	225, 268
Hutton	1737	255
Huxley	1825	263, 280
Huyghens	1629	237
Hwen T'sang	605	260
Hyde	1636	237

Name.	Year of Birth.	Page.
Hyder Ali	1701	241, 268
Hypatia	350	220
Hyperides	B. C. 396	220, 228
Ibn Batuta	1304	232
Ibn Khaldoun	1332	229, 256
Ibn Khallikan	1211	216, 255, 275
Ibsen	1828	244
Ibycus	B. C. 583	231
Ignatius (St.)	799	262
Ingres	1780	227
Ion	B. C. 483	221, 274
Irenæus	131	219
Irene	752	232, 261
Irving	1783	240
Isæus	B. C. 420	224, 228, 229, 269
Isidorus	570	222
Isocrates	B. C. 436	227, 269
Jacobi	1743	238
Jamblichus	282	258
Jansen	1585	235
Jay	1745	238
Jefferson	1743	238
Jeffrey	1773	255
Jenghiz Khan	1163	246
Jenner	1749	255, 271
Jerome (St.)	341	220
Jerome of Prague	1365	258
Jerrold	1803	241
Joachim	1831	244, 275
Johnson	1709	242
Joinville	1224	267, 272
Jones, Sir Wm	1746	238
Jonson	1574	234
Josephus	37	263
Jovius	1483	234
Julian	331	258
Justin	106	219
Justinian the Great	483	221, 275
Juvenal	47	264, 265
Kane	1820	243
Kant	1724	237
Karamzin	1765	218, 264
Kaulbach	1805	262
Kaunitz	1711	242, 255
Kean	1787	240
Keats	1795	269
Keble	1792	241
Kemble (John)	1757	238
Kemble (Chas.)	1775	262
Kempis	1380	247
Ken	1637	253
Kepler	1571	208, 236, 260, 275

Name.	Year of Birth.	Page.
Keppel	1725	261
Key	1776	262
Khaldoun (Ibn)	1332	229, 256
Khallikan (Ibn)	1211	216, 255, 275
Kingsley, Chas	1819	216
Kirchoff	1826	243
Kisfaludy	1788	255
Kleber	1754	248
Kneller	1648	238
Knowles	1784	240
Knox	1505	252, 260, 273
Kock (Paul de)	1794	241
Kölcsey	1790	256
Kosciusco	1746	238
Kossuth	1806	263, 273
Kriloff	1768	239
Kublai Khan	1216	232, 270
Laberius	B. C. 105	229
La Bruyère	1645	238
Lacaille	1713	242
La Fayette	1757	238
La Fontaine	1621	235
Lagrange	1736	237
Lalande	1732	237
Lamarck	1744	245
Lamartine	1790	256
Lamb	1775	262
Lamennais	1782	240
La Motte	1777	215, 248
Landor	1775	262
Landseer	1802	262
Lanfranc	1005	252, 273
Langland	1331	258
Lâo-tsze	B. C. 604	226, 274
Laplace	1749	255, 271
Lardner	1684	240
Largillière	1656	261
Las Casas	1474	234
Lassen	1800	213
Latimer	1490	251
Lavater	1741	245, 275
Lavoisier	1743	238
Law	1686	236
Lawrence	1769	248
Le Brun	1619	253
Lecky	1838	244
Lee, Robert E.	1806	263
Leeuwenhoek	1632	237
Legendre	1752	261
Leibnitz	1646	238
Leicester	1529	252
Leighton	1612	235, 271
Lemonnier	1715	242

Name.	Year of Birth	Page.
Leonardo da Vinci	1452	234
Leopardi	1798	241
Leopold the Great	1640	237
Lepsius	1813	242
Le Sage	1668	239
Lessing	1729	237, 244
Lever	1806	263
Leverrier	1811	242
Leyden (Van)	1494	251
Libanius	316	220, 258
Lieber	1800	213
Liebig	1803	241
Liguori	1696	241
Lilye	1466	217
Linacre	1460	234
Lincoln	1809	242
"Lind," Jenny	1820	210, 243
Lindsay	1490	251
Linnæus	1707	210, 242
Lipsius	1547	264
Liszt	1811	242
Littleton	1407	246
Littré	1801	241
Liverpool	1770	255
Livingstone	1813	242
Livius Andronicus	B. C. 283	223
Livy	B. C. 59	274
Locke	1632	237, 283
Lockhart	1794	241
Longfellow	1807	242
Longinus	210	219, 269
Lope de Vega	1562	248
Lorraine	1600	213
Lotze	1817	217, 243
Louis XI	1423	246, 259, 276
Lover	1797	264
Lowell	1819	216
Loyola	1491	259, 268
Lucan	39	264
Lucian	120	264
Lucilius	B. C. 149	229
Lucretius	B. C. 95	274
Lucullus	B. C. 105	229
Luini	1465	234
Lully	1234	276
Luther	1483	209, 234, 281
Luxembourg	1628	226
Lycon	B. C. 300	213
Lycurgus	B. C. 912	222, 230, 274
Lydgate	1375	232
Lyell	1797	264
Lyly	1554	236
Lysander	B. C. 432	228, 269, 274
Lysias	B. C. 438	221, 230

Name.	Year of Birth.	Page.
Lysimachus	B. C. 361	268
Lysippus	B. C. 394	268
Mabillon	1632	237
Macaulay	1800	213
Maccullagh	1809	242
Machiavelli	1469	233
Mackintosh	1765	218, 264
Macleod	1812	242
Macready	1793	241
Mæcenas	B. C. 70	229
Magellan	1470	234, 272
Magliabechi	1633	237
Magnusson	1663	239
Mahmood	971	251
Maimbourg	1620	226, 264
Maimonides	1135	253
Maistre	1754	248
Maitland	1525	233, 247
Makrízí	1364	247
Malachy (St.)	1094	253
Malcolm	1769	248
Malebranche	1638	226, 236
Malherbe	1555	225
Malibran	1808	263
Malpighi	1628	226
Malthus	1766	217, 239
Manetho	B. C. 290	223
Manfred	1231	255
Manley, Mary	1672	261
Mansfield	1705	237, 241
Mantegna	1431	247
Manutius	1450	247
Manzoni	1785	240
Marat	1744	245
Marcantonio	1482	233
Marcellus	B. C. 268	229 230, 282
Marcian	390	259
Mariana	1536	260
Mariette	1821	243
Marignolli	1282	258
Mario	1810	242
Marius	B. C. 155	223, 265, 274
Marivaux	1688	236
Marlborough	1650	247
Marlowe	1564	247
Marot	1496	225
Marryatt	1792	241
Marston	1574	234
Martel	689	250
Martialis	43	218, 275
Martin (St.)	316	220, 258
Martineau, Harriet	1802	262
Martini	1706	248

Name.	Year of Birth.	Page.
Martino	1283	223
Martyr	1500	213
Marvell	1621	235
Masaccio	1402	224
Masinissa	B. C. 238	229
Masséna	1758	262
Massinger	1584	234
Mas' údy	886	251
Mather	1663	239
Matsys	1466	217
Maupertuis	1697	237
Maurice	1521	235, 249, 260
Mazarin (Cardinal)	1602	237, 260, 273
Mazzini	1805	262
Medici	1448	224
Mehemet Ali	1769	248
Meissonier	1812	242
Melancthon	1497	225, 267
Menage	1613	235
Menander	B. C. 342	268
Mencius	B. C. 372	224
Mendelssohn	1809	242
Mercadante	1797	264
Mercator	1512	235
Mérimée	1803	241
Mesmer	1734	244, 273
Metastasio	1698	241
Methodius	825	232
Metsu	1630	236
Metternich	1773	255
Meyerbeer	1794	241
Mezzofanti	1774	239
Michaelis	1717	216, 243
Michelet	1798	241
Michelozzi	1391	251, 267
Mickiewicz	1798	241
Middleton	1683	240
Mill, John Stuart	1806	263
Miller (Hugh)	1802	262
Miller (Joaquin)	1841	245, 275
Millet	1814	242
Milton	1608	226, 273
Mirabeau	1749	255, 271
Mirkhond	1433	233
Mitford	1744	245
Mithridates	B. C. 121	214, 219
Mohammed	571	208, 260, 281
Molière	1622	260, 283
Molina	1535	236
Moltke (Von)	1800	213
Monge	1746	238
Monk	1608	226
Montaigne	1533	233, 252
Montecuculi	1608	226

Name.	Year of Birth.	Page.
Montesquieu	1689	240, 248
Monteverde	1568	234
Montezuma I.	1390	259
Montgolfier	1740	237, 261
Montrose	1613	235
Moody	1837	256
Moore (Sir John)	1761	239
Moore (Thomas)	1779	240
More (Sir Thomas)	1480	251, 282
More (Hannah)	1745	238
Moretto	1498	233, 252, 272
Morland	1763	239, 262, 271
Moroni	1510	235
Moscheles	1794	241
Mosheim	1694	241, 254
Motley	1814	242
Mozart	1756	264
Müller (Karl)	1797	264
Müller (Max)	1823	243
Munkacsy	1844	245
Muratori	1672	261
Murchison	1792	241
Murillo	1618	253
Murray, Lindley	1745	238
Musset	1810	242
Muziano	1528	233
Nadir Shah	1688	236
Nævius	B. C. 265	220, 230, 274
Nairne, Caroline	1766	217, 239
Napier (Sir Charles)	1782	240
Napier (Sir William)	1785	240, 273
Napoleon	1769	248, 281, 284
Narses	480	221, 282
Nasir Khosran	1004	252
Neander	1789	240
Necker	1732	237
Nelson	1758	262
Neri	1515	216, 235
Nero	37	263
Nerva	32	274
Nestor	1056	283
Newton	1642	236
Ney	1769	248
Nicephorus	758	262
Nicole	1625	249, 260, 285
Niebuhr	1776	262
Nightingale, Florence	1820	243
Nizánú	1141	246
North	1785	240, 273
Northcote	1818	216, 243
Norton, Caroline	1808	263
Novalis	1772	248

Name.	Year of Birth.	Page.
O'Connell	1775	262
Odoacer	434	214, 259
Odoric	1286	247
Oehlenschläger	1779	240
Oersted	1777	215, 248
Offenbach	1819	216
Oken	1779	240
Olivarez	1587	247
Omar I.	583	260
Omar Khayyám	1017	252
Opie	1761	239
Orcagna	1316	258
Ordericus Vitalis	1075	252
Origen	185	219, 257
Ormonde	1610	235
Otho	32	274
Otto the Great	912	222, 275, 281
Otway	1651	238, 275
"Ouida"	1840	271
Overbeck	1789	240
Ovid	B. C. 43	218
Owen	1616	216
Pacuvius	B. C. 219	219, 274
Paganini	1784	240
Paine	1736	255
Palestrina	1524	236
Paley	1743	238
Palissy	1510	235
Palladio	1518	252
Palmerston	1784	240
Paracelsus	1493	235
Parepa-Rosa	1836	256, 273
Park, Mungo	1771	262
Parker, Theodore	1810	242
Parmenides	B. C. 539	225
Parmigiano	1504	252
Parr	1747	245
Parrhasius	B. C. 440	227
Parry	1790	256
Parton	1822	263
Pascal	1623	237
Pasteur	1822	263
Patrick (St.)	396	259
Paulus	B. C. 229	230
Pausanias	B. C. 508	227, 228
Payne	1792	241
Peale	1778	239
Peel	1788	255
Penn	1644	226, 236
Pepys	1632	237
Pergolesi	1710	242
Pericles	B. C. 497	225
Perrault	1628	226

Name.	Year of Birth.	Page.
Perseus	34	257, 275, 276
Perugini	1446	233, 267
Peruzzi	1481	234, 275
Pestalozzi	1746	238
Peterborough	1658	268
Peter the Hermit	1050	246, 272
Peter the Great	1672	261
Petrarch	1304	232
Phalereus	B. C. 346	228
Pherecydes	B. C. 600	213
Phidias	B. C. 488	225
Philemon	B. C. 359	220
Philiscus	219	219, 275
Philistus	B. C. 441	228
Phillips, Wendell	1811	242
Philo	B. C. 14	229
Philolaus	B. C. 480	221
Philopœmen	B. C. 252	214, 220, 229
Philostratus	170	229, 265
Philoxenus	B. C. 435	228
Phocion	B. C. 402	224
Photius	822	246, 249, 263
Phrynicus	B. C. 512	228, 268
Piccolomini	1599	253
Pichegru	1761	239
Pindar	B. C. 522	225
Pippi	1492	235
Piranesi	1711	242, 255
Piron	1689	240, 248
Pisano	1206	246, 270, 273
Pisistratus	B. C. 605	227, 269
Pitcairne	1652	253
Pitman	1813	242
Pitt	1759	238
Pittacus	B. C. 651	227
Pius, Antoninus	86	219
Pizarro	1471	251
Plato	B. C. 429	230
Plattner	1800	213
Plautus	B. C. 270	223
Pliny the Elder	23	274, 276
Pliny the Younger	61	264
Plotinus	205	219
Plückner	1801	241
Plutarch	50	218
Pocock	1604	226, 237
Poe	1809	242
Poggio	1380	247
Poisson	1781	240
Politian	1454	259
Pollio	B. C. 76	218, 230
Polo	1254	258
Polybius	B. C. 210	219, 229, 269
Polycarp	69	218, 275

Name.	Year of Birth.	Page.
Pompey	B. C. 106	219, 231, 280
Pontanus	1426	247
Pope	1688	236, 284
Porphyrius	234	219, 276
Porson	1759	238
Poushkin	1799	262
Poussin	1594	253
Powers, Hiram	1805	262
Praed	1802	262
Praxiteles	B. C. 387	229
Prescott	1796	241
Priestley	1733	237, 244
Prior	1664	239
Proclus	412	221, 270, 275
Procopius	487	259
Prodicus	B. C. 460	225
Propertius	B. C. 50	218
Protagoras	B. C. 479	225
Protogenes	B. C. 360	220, 228
Proudhon	1809	242
Prynne	1600	213
Puffendorf	1632	237
Pym	1584	234
Pyrrhus	B. C. 318	266, 268, 269
Pythagoras	B. C. 582	226
Quin	1693	241
Quintilian	36	250
Rabelais	1490	251
Racine	1639	236, 268
Raff	1822	263
Raimondi	1488	225, 268
Raleigh	1552	234
Ramsay	1686	236
Raphael	1483	209, 234
Raschid, Haroun al	763	262, 266, 270
Rashi	1040	249, 257, 266, 272
Ravenna	1512	235
Read, T. Buchanan	1822	263
Reade	1814	242
Reaumur	1683	240
Reeves, Sims	1821	243
Regnard	1656	261
Regnier	1573	234
Reid	1710	242
Rembrandt	1606	226, 268
Remigius	438	221
Remusat	1797	264
Renan	1823	243
Rennell	1742	245, 261
Reuchlin	1455	232
Reuter	1810	242
Reynolds	1723	237, 243

Name.	Year of Birth.	Page.
Ricardo	1772	248
Ricasoli	1809	242
Ricci	1552	234
Richard Cœur de Lion	1157	254
Richelieu	1585	235
Richter	1763	239, 262, 271
Ricimer	423	259, 276
Rienzi	1313	216, 258
Ristori	1821	243
Robespierre	1758	262
Robusti	1518	252
Rochefoucauld	1613	235
Rogers	1762	248
Rohan	1579	252
Roland (Madame)	1754	248
Rollin	1661	215, 239
Romanoff	1597	237
Romney	1734	244, 273
Rooke	1650	247
Roscoe	1753	238, 268
Rossetti	1828	244
Rossini	1792	241
Rothe	1799	262
Rousard	1524	236
Rousseau	1712	241
Rubens	1577	209, 234, 248
Rubinstein	1829	244
Ruckert	1788	255
Rúdagí	891	251
Rufinus	345	232, 265
Ruhnken	1723	237, 243
Rúmí	1207	246
Rupert	1619	253
Ruskin	1819	216
Russell, Sir Charles	1833	244
Ruysdael	1625	260
Rymer	1641	236
St. Ambrose	340	258
St. Anthony	252	220
St. Augustine	354	220, 258
St. Benedict	481	221, 283
St. Bernard	1091	253
St. Boniface	680	261
St. Bruno	1030	249, 272
St. Catherine	1347	232, 258
St. Columba	521	260, 275
St. David	490	221
St. Dominic	1170	254
St. Edmund	1189	250
St. Epiphanius	304	220
St. Francis	1182	254, 266
St. Genevieve	422	221
St. Hilda	614	250

Name.	Year of Birth.	Page.
St. Hugh	1135	253
St. Ignatius	799	262
St. Jerome	341	220
St. Malachy	1094	253
St. Martin	316	220, 258
St. Patrick	396	220, 259
St. Sebastian	254	258
St. Simon	1760	239
St. Theresa	1515	216, 235
St. Vincent de Paul	1577	209, 234, 248
Saadia	892	221
Sachs	1494	251
Sacy	1758	262
Sa'dí	1185	257
Saint-Amand	1594	253
Sainte Beuve	1804	241
Sala	1828	244
Saladin	1137	208, 253, 281
Sallust	B. C. 86	219, 281
Salmasius	1588	236
Salvator Rosa	1615	217, 235
Saná'í	1053	257
"Sand," George	1804	241
Sandeau	1811	242
Sappho	B. C. 608	226, 227, 229
Sardanapalus	B. C. 694	266, 274
Sardou	1831	244, 275
Sarpi	1552	234
Sarto	1487	259
Savage	1698	241
Savonarola	1452	234
Saxe (Marshal)	1696	241, 273
Saxo Grammaticus	1155	223
Scaliger, J. S.	1484	234, 272
Scaliger, J. J.	1540	233, 271
Scarlatti, A.	1659	238
Scarlatti, D.	1683	240
Schiller	1759	238
Schilling	1775	262
Schlegel, W.	1767	239
Schlegel, F.	1773	255
Schleiermacher	1768	239
Schliemann	1822	263
Schopenhauer	1788	255
Schubert	1797	264
Schumann	1810	242
Schwarz	1726	243, 255
Schwenkfeld	1490	251
Scipio	B. C. 185	219
Scot	1191	254
Scott	1771	215, 262
Sebastian (St.)	254	258
Selden	1584	234
Semler	1725	261

Name.	Year of Birth.	Page.
Seneca	B. C. 3	267, 279
Servetus	1511	235
Severus	146	246
Sévigné (Mme.)	1626	253, 283
Shaftesbury	1621	235
Shakespeare	1564	247, 283
Shelley	1792	210, 241
Shenstone	1714	242
Sheridan	1751	238, 273, 275
Siddons (Mrs.)	1755	238
Sidney	1554	248, 252
Sigismond the Great	1467	234
Signorelli	1440	253
Silius Italicus	25	231
Simon	1638	226, 236
Simon (St.)	1760	239
Simonides	B. C. 555	225
Sisenna	B. C. 131	214, 219
Sismondi	1773	255
Skelton	1460	234, 280
Sleidanus	1506	248
Sloane	1660	239
Smiles	1816	243, 271
Smith, Adam	1723	237, 243
Smith, Sydney	1771	215, 262
Smollett	1721	243, 271
Snorro Sturluson	1179	254
Sobieski	1624	236, 237, 271, 280, 283
Socinus	1539	225, 236, 264
Socrates	B. C. 468	221, 228, 230, 282
Sodoma	1479	225
Solario	1382	223
Solon	B. C. 638	226,231, 281
Sontag	1806	263
Sophocles	B. C. 495	230, 266
Soult	1769	248
South	1633	237
Southey	1774	239
Spallanzani	1729	237, 244
Speke	1827	244
Spencer, Herbert	1820	243
Spener	1635	236, 253
Spenser	1552	234
Speusippus	B. C. 406	221, 274
Spinola	1569	248
Spinoza	1632	237
Spohr	1784	240
Spurgeon	1834	244
Stael (Madame de)	1766	217, 239
Stahl	1660	239
Stanhope	1753	238, 268
Stanley, Dean	1815	243
Stanley, H. M.	1840	271
Statius	45	264

Name.	Year of Birth.	Page.
Stedman	1833	244
Steele	1672	261
Steffani	1655	238
Steiner	1796	241
Stephenson	1781	239
Sterne	1713	242
Stesichorus	B. C. 630	229, 227, 269
Stevinus	1548	264
Stewart (Dugald)	1753	238, 268
Stilicho	359	220
Stirling	1806	263
Stowe (Mrs.)	1814	242
Strabo	B. C. 63	267
Stradivarius	1700	213
Stuart	1720	243
Suarez	1548	264
Sue	1804	241
Sulla	B. C. 138	229, 231, 281
Sullivan, Sir Arthur	1844	245
Sumner	1811	242
Surrey	1517	235, 252
Suwaroff	1730	244, 261
Swedenborg	1688	236
Swift	1667	239
Swinburne	1837	256
Sydenham	1624	236, 237
Sylburg	1536	260
Tabari	839	232
Tacitus	55	214, 257
Talleyrand	1754	248
Tallis	1515	216, 235
Talma	1763	239, 262, 271
Tamerlane	1336	209, 256
Tannahill	1774	239
Tasso	1544	233, 236
Tassoni	1565	218, 234
Tauler	1290	223, 249, 256
Taylor (Jeremy)	1613	235
Taylor (Bayard)	1825	263
Tennyson	1809	242, 273
Terence	B. C. 185	219
Terpander	B. C. 700	213
Tertullian	160	257
Thackeray	1811	242
Thalberg	1812	242
Thales	B. C. 644	227, 274
Themistocles	B. C. 509	268
Theocritus	B. C. 310	220, 229
Theodore (Archbishop)	602	260
Theodoret	389	220
Theodoric	454	215, 221, 259
Theodosius the Great	346	246
Theognis	B. C. 570	222, 231

Name.	Year of Birth.	Page.
Theophrastus	B. C. 368	228, 229, 282
Theopompus	B. C. 377	224
Theresa (St.)	1515	216, 235
Theresa (Maria)	1717	216. 243
Thibaut	1774	239
Thiers	1797	264
Thirlwall	1797	264
Tholuck	1799	262
Thomson	1700	213
Thoreau	1817	217, 243
Thorwaldsen	1770	255
Thucydides	B. C. 471	230, 280
Tiberius	B. C. 42	218
Tibullus	B. C. 54	267
Tieck	1773	255
Tietjens	1831	244, 275
Tillotson	1630	236, 271
Tilly	1559	252
Timæus	B. C. 352	229, 230
Timoleon	B. C. 408	228, 229, 269
Timotheus	B. C. 454	214, 221, 228
Timour	1336	209, 256
Tintoretto	1512	235
Tippoo Saib	1749	255, 271
Tischendorf	1815	243
Titian	1477	209, 234
Titus	40	257, 265
Tocqueville	1805	262
Tolstoi	1828	244
Tooke	1736	237
Torquemada	1420	224, 251, 270
Torricelli	1608	226
Tourguenieff	1818	216, 243
Trajan	53	257
Trebonianus	475	259
Trevithick	1771	262
Tribonian	491	259
Tromp	1597	237
Tucker	1705	237
Tullius	B. C. 578	226
Tupper	1810	242
Turenne	1611	235
Turgot	1727	244
Turner	1775	262
"Twain," Mark	1835	244
Tyndale	1484	234, 272
Tyndall	1820	243
Udall	1505	260
Uhland	1787	240
Ulphilas	313	258
Urquhart	1605	237, 260
Ussher	1580	247

Name.	Year of Birth.	Page.
Valens	328	258
Valerian	213	219
Valla	1406	246, 259, 267
Vanbrugh	1666	215, 239
Vandevelde	1633	237
Van Dyck	1599	253
Van Leyden	1494	251
Varro	B. C. 116	230, 274
Vasa	1496	225
Vasari	1512	235
Vattel	1714	242
Velazquez	1599	253
Verdi	1814	242
Vergniaud	1753	238, 268
Vernet	1789	240
Veronese	1528	233
Verrocchio	1435	251
Vespasian	9	263, 280
Vespucci	1451	233, 275
Vico	1668	239
Victoria (Queen)	1819	216, 282
Vida	1489	248
Vieuxtemps	1820	243
Vigny	1799	262
Villani	1275	232
Villehardouin	1160	232, 257
Villon	1431	247
Vincent	1191	254
Vincent de Paul (St.)	1576	225
Virgil	B. C. 70	229, 231
Vitellius	15	218, 274
Vogler	1749	255, 271
Voiture	1598	253
Volta	1745	238
Voltaire	1694	241, 254
Von Hutten	1488	268
Von Moltke	1800	213
Voragine	1228	223
Voss	1751	238, 273. 275
Wagner	1813	242
Waitz	1813	242
Walafrid	808	263
Wales (Prince of)	1841	244
Wallace	1270	223, 255
Wallenstein	1583	234, 260
Waller	1605	237, 260
Walpole (Sir Robert)	1676	247, 280
Walpole (Horace)	1718	216, 243
Walton	1593	235
Warburton	1698	241
Warwick	1428	233, 272
Washington	1732	237, 282, 283
Watt	1736	237

Name.	Year of Birth.	Page.
Watts	1674	239
Weber	1786	262
Webster (Noah)	1758	262
Webster (Daniel)	1782	240
Wedgwood	1730	244, 261
Wellington	1769	248
Werner	1750	245
Wesley	1703	241
Wessel	1420	224, 251, 270
West	1738	244
Whately	1787	240
Whiston	1667	239
Whitefield	1714	242
Whittier	1807	242
Wilberforce	1759	238
Wilkes	1727	244
Wilkie	1785	240, 273
William, of Occam	1280	223, 249
William, Prince of Orange	1650	247
William the Conqueror	1027	246, 281
William the Lion	1165	218, 232
William the Silent	1533	233, 252
Williams, Roger	1599	253
Willis, N. P	1806	263
Wilson, Alexander	1766	217, 239
Winckelmann	1717	216, 243
Wolfe (Charles)	1791	240
Wolfe (James)	1727	244
Wollaston	1766	217, 239
Wolsey	1471	251, 275
Worcester	1784	240
Wordsworth	1770	255
Wotton	1666	215, 239
Wren	1632	237
Wyatt	1503	233, 273
Wycherley	1640	237
Wycliffe	1324	256, 270, 276
Wyttenbach	1746	238
Xavier	1506	248
Xenocrates	B. C. 396	220, 228
Xenophanes	B. C. 620	226, 227, 229
Xenophon	B. C. 430	221, 280
Ximenes	1436	259, 270
Young (Edward)	1681	240
Young (Thomas)	1773	255
Zaleucus	B. C. 780	227
Zarlino	1517	252
Zeno	B. C. 350	220, 228
Zinzendorf	1700	213
Zwingli	1484	234, 272

YEAR OF BIRTH OF HISTORICAL CHARACTERS.

B. C.	Page.
995	222, 230
912	222, 230, 274
892	222
780	227
705	227
700	213
695	222
694	266, 274
651	227
650	229
644	226, 227, 274
638	226, 231, 281
630	229, 227, 269
628	226
624	265, 269
620	226, 227, 229
612	269
611	266, 274
608	226, 227, 229
606	214, 226, 231
605	227
604	226, 274
600	213
590	227
583	231
582	226
578	226
576	225
570	222, 231
562	231, 274
555	225
552	230
551	227, 268, 274
550	222
544	222, 227
540	227
536	227
539	225
535	214
530	227, 269
525	208, 214, 228
522	225
520	225, 227, 228, 269, 282
519	225, 283
512	228, 268

B. C.	Page.
510	231, 266, 269
509	268
508	227, 228
500	213
497	225
496	225, 228, 274
495	230, 266
490	221, 227
488	225
484	207, 214, 228, 274
481	221
483	221
480	221, 230
479	225
473	225
471	230, 280
468	221, 228, 230, 282
466	221
460	228, 265, 266
456	228
454	214, 221, 228
453	224, 265, 274
450	228, 229
448	224
446	228, 274
445	224, 230
441	228
440	227
438	221, 230
436	227, 269
435	228
432	228, 269, 274
430	221, 229, 280
429	230
425	208, 228
422	221, 224
420	224, 228, 229, 269
412	221, 228, 230, 269
408	228, 229, 269
406	221, 274
402	224
399	221, 229
396	220, 228
394	268
389	220

B. C.	Page.
387	229
384	207, 220, 228, 274
381	224
377	224
372	224
368	228, 229, 282
361	268
360	220, 228
359	220
356	228, 280, 281
354	220, 228, 274
352	229, 230
350	220, 228
346	228
342	268
341	220, 228, 282
335	228
332	228
323	214
318	266, 268, 269
316	220, 230
310	220, 229
304	220
300	213
299	229, 268
290	223
287	220, 229
283	223
280	223, 230
276	223, 230, 267
271	230
270	223
268	229, 230, 282
265	220, 230, 274
252	214, 220, 229
249	229
247	268, 281
245	220, 230
238	229, 230
237	266
234	219, 274
229	230
228	223
219	219, 274
213	219
210	219, 229, 269
205	219, 229, 269
188	219
185	219
170	229, 265
155	223, 265, 274
151	214, 266
149	229
140	219

B. C.	Page.
138	229, 231, 281
131	214, 219
121	214, 219
116	230, 274
114	229
109	267
106	219, 231, 280
105	229
100	213, 281
95	274
94	267
86	219, 281
83	231
76	218, 230
70	229, 231
69	218
65	230, 266, 280
63	267
62	231
59	274
54	267
50	218
43	218
42	218
15	218
14	229
10	231, 279
3	267, 279
A. D.	
9	263, 280
15	218, 274
23	274, 276
24	274, 276
25	231
32	274
34	257, 275, 276
36	250
37	263
39	264
40	257, 265
42	218, 274
43	218, 275
45	264
47	264, 265
48	264
50	218
51	264, 274
53	257
55	214, 257
60	257
61	264
69	218, 275
76	218
86	219

A. D.	Page.
96	264, 275
106	219
120	264
121	209, 214, 219, 257
125	231, 275, 285
130	246
131	219
140	219
146	246
160	257
185	219, 257
188	219
200	213
205	219
210	219, 269
213	219
214	258, 269, 275
219	219, 275
234	219, 276
245	220, 232
252	220
254	258
256	264
265	220, 258, 264
274	258
282	258
287	220
297	264
304	220
310	220
313	258
314	258
316	220, 258
328	258
330	246, 265
331	258
340	258
341	220
345	232, 265
346	246
347	258
350	220
354	220, 258
359	220
360	220
365	258, 280
376	265
384	220, 275
389	220
390	259
396	220, 259
399	221, 266
406	221, 259, 281
412	221, 270, 275
422	221
423	259, 276
430	221
434	214, 259
436	259, 270
438	221
454	215, 221, 259
466	221, 281
468	221
475	259
480	221, 282
481	221, 283
483	221, 275
487	259
490	221
491	259
505	215, 260, 266, 281
510	260
521	260, 275
530	260, 270
536	250, 260
544	222
550	222
570	222
571	208, 260, 281
575	208, 215, 260
583	260
600	213
602	260
605	260
614	250
622	260
625	260
656	215, 261
672	261
680	261
689	250
695	222
725	261
730	249, 261, 280
740	261
742	261, 270, 281, 283
752	232, 261
758	262
763	262, 266, 270
771	262
775	208, 262
776	262
786	262
799	262
802	262
805	262
806	263, 266
808	263

A. D.	Page.
822	246, 249, 263
825	232, 263
839	232
840	263, 270
849	266
850	246
852	232
886	251
891	251
892	222
895	208, 251
912	222, 275, 281
920	251
925	232
935	251, 266
939	215, 232
941	246
945	246
971	251
980	249, 251, 282
990	249, 251, 266
994	251
995	208, 222
998	252
1000	213, 285
1004	252
1005	252, 273
1017	252
1018	209, 252, 281
1022	246
1027	246, 281
1029	252
1030	249, 272
1033	252
1034	257
1040	249, 257, 266, 272
1050	246, 272
1053	257
1054	252
1055	257
1056	283
1059	252
1060	257, 272
1070	252, 272
1075	252
1079	252
1091	253
1094	253
1098	253
1099	253
1100	213
1111	215
1114	250
1118	209, 253

A. D.	Page.
1119	253
1121	257, 275
1122	249
1126	253
1135	253
1137	208, 253, 281
1141	246
1145	246
1147	253
1152	253
1155	223
1157	254
1160	232, 257
1162	254
1163	246
1165	218, 232
1170	254
1175	254
1179	254
1180	254
1182	254, 266
1185	257
1189	250
1191	254
1193	246
1194	254
1206	246, 270, 273
1207	246
1211	216, 255, 275
1214	258, 270
1216	232, 270
1221	215, 249
1223	246
1224	267, 272
1226	247, 255
1227	246
1228	223
1231	255
1234	276
1237	255
1240	232
1249	255
1254	258
1260	229, 272
1265	232, 258
1270	223, 255
1273	255
1274	258
1275	232
1276	223
1280	223, 249
1282	258
1283	223
1286	247

A. D.	Page.
1288	255
1290	223, 249, 256
1300	213
1304	232
1313	216, 258
1314	258
1316	232, 258
1324	256, 270, 276
1325	247, 249
1328	258
1331	258
1332	256
1336	209, 256
1337	256
1340	232, 249, 258
1347	232, 258
1354	258
1355	232
1363	246
1364	247
1365	258
1369	209, 233
1372	224
1375	232
1377	224
1378	247, 272
1380	247
1381	224, 275
1382	233
1386	251
1387	247
1390	259
1391	251, 267
1393	246
1395	251
1396	259
1398	233
1400	213
1401	233
1402	224, 273
1403	233
1404	232
1406	246, 259, 267
1407	246
1420	224, 251, 270
1422	224
1423	246, 259, 276
1425	233
1426	247
1428	233, 272
1431	247
1433	233
1434	259
1435	251

A. D.	Page.
1436	259, 270
1437	233, 267
1440	233
1444	233
1445	224
1446	233, 267
1447	232
1448	224
1449	268
1450	247
1451	233, 275
1452	234
1453	224
1454	259
1455	232
1460	234, 280
1465	234
1466	217
1467	234
1468	234
1469	233
1470	234, 272
1471	251, 275
1472	234
1473	225, 234
1474	234
1475	208, 259
1476	247
1477	209, 234
1479	225
1480	251, 282
1481	234, 275
1482	233
1483	234, 281
1484	234, 272
1485	235
1486	247
1487	259
1488	225, 268
1489	248
1490	251
1491	259, 268
1492	235
1493	235
1494	251
1496	225
1497	225, 267
1498	233, 252, 272
1499	248
1500	213
1501	233
1503	233, 273
1504	252
1505	252, 273

A. D.	Page.
1506	248
1508	248
1509	235, 263
1510	235
1511	235
1512	235
1513	235
1515	216, 235
1517	235, 252
1518	252
1519	225
1520	225, 280
1521	235, 249
1522	225
1524	236
1525	233, 247
1527	236
1528	233
1529	252
1530	236
1533	233, 252
1535	236
1537	233, 263
1538	236
1539	225, 236, 264
1540	233, 271
1541	236, 275
1542	236
1544	233, 236
1545	264
1546	233
1547	264
1548	264
1551	215, 233, 264
1552	234
1553	236
1554	248, 252
1555	225
1559	252
1560	234, 272
1561	264, 275
1562	248
1564	247, 283
1565	218, 234
1566	217
1567	234
1568	234
1569	248
1570	234, 252
1571	208, 236, 275
1572	234, 248, 280
1573	234
1574	234
1575	252, 272
1576	225
1577	209, 234, 248
1578	226, 247
1579	252
1580	247
1581	234
1582	226
1583	234
1584	234
1585	235
1586	236
1587	247
1588	236
1591	253
1592	235
1593	235
1594	253
1596	264
1597	237
1598	253
1599	253
1600	213
1602	237, 273
1604	226, 237, 273
1605	237
1606	226, 268
1608	226, 273
1609	235
1610	235
1611	235
1612	235, 271
1613	235
1615	217, 235
1616	216
1617	216, 235
1618	253
1619	253
1620	226, 264
1621	235
1622	260, 283
1623	237
1624	236, 237, 271, 280, 283
1625	249, 285
1626	253, 283
1627	236
1628	226, 283
1629	237
1630	236, 271
1631	247, 282
1632	237, 283
1633	237
1635	236, 253
1636	237
1637	253

A. D.	Page.
1638	226, 236
1639	236, 268
1640	237
1641	236
1642	236
1643	238
1644	226, 236
1645	238
1646	238
1647	253
1648	238
1650	247
1651	238, 275
1652	253
1653	236, 238
1655	238
1656	261
1657	238, 254
1658	268
1659	238
1660	239
1661	215, 239
1662	254
1663	239
1664	239, 273
1666	215, 239
1667	239
1668	239
1670	254
1671	236
1672	261
1674	239
1675	254
1676	247, 280
1678	239
1679	240, 254
1680	254, 261, 273
1681	240
1682	240, 254, 268
1683	240
1684	240
1685	240
1686	236
1697	237
1688	236, 284
1689	240, 248
1691	240, 254
1692	241
1693	241
1694	241, 254
1696	241, 273
1697	237
1698	241
1699	248

A. D.	Page.
1700	213
1701	241, 268
1702	237
1703	241
1704	237, 241
1705	237
1706	248
1707	210, 242
1708	248
1709	242
1710	242
1711	242, 255
1712	242
1713	242
1714	242
1715	243
1716	217, 243, 285
1717	216, 243
1718	216, 243
1720	243
1721	243, 271
1723	237, 243
1724	237
1725	261
1726	243, 255
1727	244
1728	244, 271, 280, 285
1729	237, 244
1730	244, 261
1731	244, 255, 282
1732	237, 282, 283
1733	237, 244
1734	244, 273
1735	244
1736	237
1737	255
1738	244
1739	244
1740	237, 261
1741	245, 275
1742	245, 261, 271, 283
1743	238
1744	245
1745	238
1746	238
1747	245
1748	238
1749	255, 271
1750	245
1751	238, 273, 275
1752	261
1753	238, 268
1754	245
1755	238

A. D.	Page.
1756	264
1757	238
1758	262
1759	238
1760	239
1761	239
1762	248
1763	239, 262, 271
1764	239
1765	218, 264
1766	217, 239
1767	239
1768	239, 273
1769	248, 281, 284
1770	255
1771	215, 262
1772	248
1773	255
1774	239
1775	262
1776	262
1777	248
1778	239
1779	240
1780	227, 281
1781	240
1782	240
1783	240
1784	240
1785	240, 273
1786	262
1787	240
1788	255, 284
1789	240
1790	256
1791	240
1792	210, 241
1793	241
1794	241
1795	269
1796	241
1797	264
1798	241
1799	262
1800	213

A. D.	Page.
1801	241
1802	262, 273
1803	241, 273
1804	241
1805	262
1806	263, 273
1807	210, 242
1808	263
1809	242, 273
1810	242
1811	242
1812	210, 242
1813	242
1814	242
1815	243
1816	243, 271
1817	217, 243
1818	216, 243
1819	216
1820	210, 243
1821	243
1822	263
1823	243
1824	256, 271
1825	263, 280
1826	243
1827	244
1828	244
1829	244
1830	244
1831	244, 275
1832	256, 271, 281
1833	244
1834	244
1835	244
1836	256, 273
1837	256
1838	244
1839	244
1840	263, 271
1841	245, 275
1842	245
1844	245
1847	245
1850	245

HISTORICAL EVENTS.

[All dates are A. D., except where otherwise indicated.]

Event.	Year.	Page.
Abyssinia, war with England	1867	257
Achaia founded	B. C. 1329	222
Achaia, war with Sparta	B. C. 227	265
Actium, battle of	B. C. 31	285
Advertisement, first newspaper	1652	238
Ægina subdued by Athens	B. C. 454	214, 268
Africa first invaded by Saracens	647	261
Agincourt, battle of	1415	216
Agrigentum founded	B. C. 582	226
Agrigentum destroyed	B. C. 405	224
Air pump invented	1650	253
Alexandrian Library founded	B. C. 284	223, 266
Alhambra commenced	1283	255
Almanac, first	1150	253
Almanac, first nautical	1767	239
America discovered by Columbus	1492	210, 222, 250, 251
American Revolution commenced	1775	208, 269
Amsterdam Bank founded	1609	247
Anemometer invented	1709	237
Antioch founded	B. C. 300	268
Antioch destroyed by earthquake	526	260
Appian Way commenced	B. C. 312	224, 269
Apulia conquered by Tancred	1190	223
Argos Kingdom founded	B. C. 1854	223
"Armada" destroyed	1588	284
Arras, Treaty of	1414	216
Asia, first invaded by Romans	B. C. 190	223
Athens founded	B. C. 1556	231
Athens conquered	B. C. 404	214, 268
Athens captured by Sulla	B. C. 86	219
Augsburg, Diet of	1530	270, 272.
Augsburg, Diet of	1555	234
Babylon rebuilt by Semiramis	B. C. 740	266
Bagdad founded	760	266
Balloon invented	1783	255
Bank of Amsterdam established	1609	247
Bank of England established	1694	249
Bank of Venice established	1157	249, 254
Bannockburn, battle of	1314	216
"Barebones" Parliament	1653	247
Barometer invented	1643	249
"Baron's" War	1268	232, 255
Bastile founded	1369	209, 257

Event.	Year.	Page.
Bible, first English, printed	1535	248, 271
Bible, first English, printed in U. S	1752	238
"Black Hole," Calcutta	1756	245
Blenheim, battle of	1704	254
Book, first	887	222
Book, first printed	1455	234
Boston, great fire in	1872	273
Boyne, battle of the	1690	254
Brazilian Revolution	1889	246, 284
Britain first invaded by Romans	B. C. 55	223
Britain evacuated by Romans	410	221
Brunanburh, battle of	937	266
Budapest University founded	1465	218
Byzantium founded	B. C. 675	226, 265
Byzantium fell	196	257
Calculating machine invented	1667	239
Calcutta, "Black Hole" of	1756	245
Cambridge University founded	635	209, 260
Camera Obscura invented	1515	270
Cannæ, battle of	B. C. 216	219, 269
Cannon first used	1331	215, 285
Cappiano, battle of	1325	258
Cards (playing) invented	1391	272
Carthage founded	B. C. 878	214
Carthage destroyed by Romans	B. C. 146	210, 269
Carthage destroyed by Arabs	698	250
Catiline, conspiracy of	B. C. 63	266
Centigrade thermometer invented	1742	238
Chalons, battle of	451	221
Charta, Magna	1215	282
Chess invented	B. C. 608	226
Chicago, great fire in	1871	245
China, conquered by Moguls	1280	223
China, Moguls expelled from	1368	232
China, war with Japan	1894	249
China, Great Wall of, begun	B. C. 214	219
Coliseum built	70	265
Cologne Cathedral commenced	1248	272
Columbian Exposition	1893	246
Comedy, first English	1551	250
Commons, House of, founded	1265	218, 232
Compass, Mariner's, invented	1302	256
Constantinople founded	32	270, 276
Constantinople captured by Turks	1453	222, 247
Cordova founded	756	261, 270
Cordova conquered by Moors	1236	267, 272
Coronea, battle of	B. C. 447	224
Cotton-gin invented	1793	246
Crecy, battle of	1346	256
Crimean War commenced	1854	210, 223, 269, 273, 282
Crœsus overthrown by Cyrus	B. C. 542	231
Crusade, first	1095	208, 222, 280
Crusade, Children's	1212	216, 270

Event.	Year.	Page.
Crusade, last	1272	272
Cuba conquered by Spaniards	1510	270
Culloden, battle of	1746	255
Dacian War	86	219
Date, first authentic	B. C. 776	227, 267
Decemvirate, first Roman	B. C. 451	221
Denmark, war with Sweden	1657	268
Dictionary, first compiled	B. C. 1095	222
Diving-bell invented	1509	248
Drama, first	B. C. 535	214, 230
Dunbar, battle of	1296	256
Ecumenical Council, first	325	258, 264, 265
Edinburgh University founded	1582	226
Egypt invaded by Nebuchadnezzar	B. C. 550	222
Egypt, conquered by Cambyses	B. C. 525	214, 225
Encyclopædia, first English	1771	245
Engine, steam, invented	1769	245
England, founded	829	250
England, conquered by Danes	1017	252
England, conquered by Normans	1066	217
England, Union of, with Scotland	1603	247
England, Bank of, established	1694	249
England, war with U. S. commenced	1812	210, 263
England, war with U. S. ended	1814	282
England, war with Abyssinia	1867	257
Engraving invented	1421	233
Ethandune, battle of	878	215
Eton College founded	1443	224
Exposition, Paris	1867	257
Fahrenheit thermometer invented	1726	243
Fair, Great London	1851	217, 250
"Field of Cloth of Gold"	1520	270
Fire, Great Boston	1872	273
Fire, Great Chicago	1871	245
Fire, Great Moscow	1812	256
Fire-arms invented	1363	257
Fleet, first Roman	B. C. 260	230
Flute invented	B. C. 1506	222
Fontenoy, battle of	1745	238
Franco-German War	1870	245
French Academy founded	1635	209, 260
French Revolution	1789	246, 284
Garter, order of, instituted	1351	232
Germany founded	919	251
Germany, Smalkaldic war began	1546	268
Germany, war with France	1870	245
Germany, empire established	1848	256, 271
Gettysburg, battle of	1863	257
Gisors, battle of	1198	250
Glasgow University founded	1451	232

Event.	Year.	Page.
Glass (object), Achromatic, invented.....	1758	245
Goths first invade Rome.....	249	265
Göttingen University founded.....	1737	244
Greenwich Observatory founded.....	1675	226
Grist mills invented.....	214	219, 269
Gunpowder invented.....	1250	250
"Gunpowder" Plot	1605	210, 249
Hadrian's Wall built.....	121	214
Halidon-Hill, battle of.....	1333	215
Hanover, Kingdom of, founded.....	1814	227
Harvard University founded.....	1636	209, 261, 271
Hastings, battle of.....	1066	217
"Hegira" of Mohammed.....	622	250, 260
Heidelburg University founded.....	1386	251
Heraclea, battle of.....	B. C. 280	223, 267
Holland founded.....	1348	256
Holland, conquest of.....	1672	254
Homer's "Iliad" first appeared.....	B. C. 961	285
Hour Glasses first used.....	240	265
Hungary founded.....	896	251
Hungary conquered.....	1526	260
Hussite wars began.....	1419	251
Iceland settled.....	874	249, 263
"Iliad" first appeared.....	B. C. 961	285
Independence, Declaration of, U. S.....	1776	227
India, Great Mutiny in.....	1857	245
Inquisition established.....	1203	254
Inquisition (Spanish) established.....	1480	225, 250
Ireland, invasion of by Danes.....	812	263
Ireland, conquest of.....	1172	254
Japan founded.....	B. C. 660	226
Japan, War with China.....	1894	249
Jerusalem captured by Nebuchadnezzar..	B. C. 598	226
Jerusalem captured by Frederick II.....	1220	267
Kalderoon, battle of.....	1514	217
Kerosene, first used.....	1826	243
Khotin, battle of.....	1673	268
Knights of Round Table organized.....	516	208
Knights Templars founded.....	1118	209, 253
Knitting-machine invented.....	1777	245
Kremlin (Moscow) founded.....	1367	257
Lathe (steam) invented.....	1843	249
Latin Kingdom founded.....	1204	254, 270
Leipsic University founded.....	1409	247
Library, first private.....	B. C. 335	230
Library, first public..,.....	B. C. 539	266
Lightning-rod invented	1752	245
Lithography invented.....	1799	256
Locomotive, first.....	1814	249

Event.	Year.	Page.
Lodi, battle of	1796	256
Logarithms invented	1614	249
London rebuilt	306	270
London, Plague in	1665	218
London, Great Fire in	1666	217
"Long" and "Short" Parliaments	1640	249
Lutzen, battle of	1632	272, 283
Macedon founded	B. C. 814	227
"Magna Charta"	1215	282
Mamelukes, Massacre of	1811	242
Mantineia, battle of	B. C. 383	214, 224
Marathon, battle of	B. C. 490	231
Masaniello's Revolt	1647	261
"Mayflower" landed	1620	210, 283
Medes conquered by Persians	B. C. 556	231, 267
Meloria, battle of	1284	272
"Merrimac" and "Monitor," battle of	1862	263
Metric system originated	1790	240
Mexican War	1847	282
Microscope invented	1590	272
Mills (grist), invented	214	219, 269
Moguls conquer China	1280	223
Moguls expelled from China	1368	232
Mogul Empire founded	1526	250
Mohammed, "Hegira" of	622	250
"Monitor" and "Merrimac," battle of	1862	263
Morgarten, battle of	1315	256, 270
Moscow, Kremlin of, founded	1367	257
Moscow burned	1812	256
Muret, battle of	1213	216
Museum, British, founded	1753	227
Musical notation invented	1025	223
Muskets invented	1521	233
Mycenæ founded	B. C. 1431	231
Mycenæ conquered	B. C. 1106	222
Najara, battle of	1366	217
Nantes, Edict of	1598	226
Nantes, Edict of, revoked	1685	236
Naples University founded	1224	267
Narva, battle of	1700	268
Naseby, battle of	1645	238
Navaretta, battle of	1367	257
Navarre, Kingdom of, founded	861	263
Navarre, Kingdom of, fell	1284	223
Nemours, Edict of	1585	236
Neptune discovered	1846	245
New Orleans, battle of	1815	256
Newspaper, first	1457	249
Newspaper, first English	1622	260
Newspaper, first English daily	1702	241
Newspaper, first United States	1690	240
Nice, Council of	325	258, 264, 265

Event.	Year.	Page.
Nicopolis, battle of	1396	251
Nile, battle of the	1798	256
Normandy conquered	1106	222
Object Glass (achromatic) invented	1758	245
Olympian games originated	B. C. 1453	222
Olympian games abolished	393	214
Olympiad of Coræbus	B. C. 776	227, 267
Omar, Mosque of, founded	636	215, 261
Organ invented	750	250
Orleans University founded	1312	217, 224, 256, 270
Orleans, battle of	1429	259, 267
Ottoman Empire founded	1329	222, 250
Oxford University founded	886	251
Padua University founded	1222	215
Pantheon built	B. C. 25	223
Paper invented	716	266
Parchment invented	B. C. 887	222
Paris, Treaty of	1856	245, 271
Paris Exposition	1867	257
Paris University founded	792	262
Parliament founded	1265	218, 232
Parliament, "Rump"	1648	273
Parliament, "Barebones"	1653	247
Parliament, first of Great Britain	1707	242
Parliaments, "Short" and "Long"	1640	249
Parthenon commenced	B. C. 443	224
Pavia, battle of	1525	225, 270
Peloponnesian War commenced	B. C. 431	231
Persian Empire founded	B. C. 519	231
Persian Kingdom fell	651	261
Peru conquered by Pizarro	1532	283
Pharsalia, battle of	B. C. 48	265
Phillippi, battle of	B. C. 42	231
Phonograph invented	1877	245
Phonography invented	1837	244
Photography invented	1802	241, 256
Piano-forte invented	1709	248
Pisa, Leaning Tower of, commenced	1174	249
Plassy, battle of	1757	245
Platæa, battle of	B. C. 479	225
Poland founded	992	251
Polish republic crushed	1846	256
Postoffice, first	1516	216
Postage (penny), originated	1840	249
Prague, battle of	1620	235
Press, hydraulic, invented	1649	250
Princeton University founded	1746	245
Printing invented	1441	215
Printing Machine, first	1814	243
Pump (air) invented	1650	253
Punic War, first	B. C. 264	267
Punic War, second	B. C. 217	267

Event.	Year.	Page.
Railroad, first passenger	1825	264
Reaumur Thermometer invented	1730	244
Reformation	1517	252, 282
Revolutionary War began	1775	208
Revolvers invented	1830	244
Rome founded	B. C. 753	227, 285
Rome, first Decemvirate	B. C. 451	221
Rome, first Fleet	B. C. 260	230, 265
Rome, first Triumvirate	B. C. 60	230
Rome, second Triumvirate	B. C. 43	265
Rome, invaded by Gauls	B. C. 225	269
Rome, burned by Nero	64	284
Rome, first invaded by Goths	249	265
Rome, sacked by Alaric	410	259
Rome, sacked by Genseric	455	259
Rome, Sistine Choir established	461	266
Rome, Empire fell	476	259
Rome, invaded by Slavs and Huns	550	222
Rome, plundered by Ladislas	1413	224
"Roses," War of	1455	259
Round Table, Knights of, organized	516	207
Royal Society, London, founded	1660	226
"Rump" Parliament	1648	273
Russia, founded	862	210, 263
Russia, Serfs freed	1861	210, 263
Russia, War with Turkey	1711	242
Russia, War with Turkey	1768	255
Russia, War with Turkey	1770	245
Russia, War with Turkey	1826	250
Russia, War with Turkey	1877	263
St. Peter's Church commenced	1506	222
St. Petersburg founded	1703	254
St. Petersburg University founded	1747	245
Sadowa, battle of	1866	217
Salamis, battle of	B. C. 480	225
Salvatierra, siege of	1211	257
Samnite War, first	B. C. 343	214, 268
Samnite War, second	B. C. 327	268, 269
Saragossa, battle of	1710	261
Saxon Heptarchy	457	265
Schools, first public, United States	1642	238, 271
Schools, Sunday, established	1780	250
Scotland, Union with England	1603	247
Serfs, Russian, emancipated	1861	263
Seven Years' War commenced	1756	261, 271
Severus, Wall of, finished	211	257
Severus, war with Persia	232	250
Seville, siege of	1246	255
Sewing machine invented	1847	245
"Short" and "Long" Parliaments	1640	249
Shrewsbury, battle of	1403	247
Sicily conquered	429	217, 259
Sicily conquered	1266	217

Event.	Year.	Page.
Sistine Choir, Rome, established.....	461	266
Slave trade began.....	1444	215
Slave trade abolished, Great Britain.....	1807	210, 242
Slave trade abolished, United States.....	1865	218
Sleeping Car invented.....	1858	245
Sparta, founded.....	B. C. 1490	231
Sparta, war with Achaian League.....	B. C. 227	265
Spartacus, Rebellion of.....	B. C. 71	267
Spectacles invented.....	1299	256
Steam Engine invented.....	1769	245
Steamboat, first.....	1807	210
Stenography invented.....	1413	217, 270
Stereotyping invented.....	1735	244, 248, 271
Stirling, battle of.....	1298	256, 267
Stockholm, Massacre of.....	1520	235
Suez Canal opened.....	1869	245, 257
Sunday Schools established.....	1780	250
Swansea, battle of.....	877	263
Sweden, war with Denmark.....	1657	268
Sydney University founded.....	1852	245
Syracuse founded.....	B. C. 751	265
Syracuse, battle of.....	B. C. 413	224
Syracuse captured by Romans.....	B. C. 212	214
Syria invaded by Artabanus.....	216	219, 285
Tannenberg, battle of.....	1410	259
Telegraph invented.....	1835	244
Telephone invented.....	1874	263
Telescope (refracting), invented.....	1608	226
Telescope (reflecting), invented.....	1657	254
Teutonic Knights organized.....	1190	254
Thebes founded.....	B. C. 1492	222
Thermometer invented	1609	237
Thermometer (Fahrenheit), invented....	1726	243
Thermometer (Reaumur), invented.....	1730	244
Thermometer (Centigrade), invented....	1742	238
Thermopylæ, battle of.....	B. C. 480	225
Thessalonica, Massacre at.....	390	259
Thirty Years' War began.....	1618	253, 271, 283
Torpedoes invented	1777	250
Tours, battle of.....	732	250, 283
Tower, Leaning, commenced.....	1174	249
Trafalgar, battle of.....	1805	210, 249
Tragedy, first exhibited.....	B. C. 535	214, 230
Trent, Council of.....	1545	272
Triumvirate, first Roman.....	B. C. 60	230
Triumvirate, second Roman.....	B. C. 43	265
Turkey, conquered by Saracens.....	710	261
Turkey, war with Russia.....	1711	242
Turkey, war with Russia.....	1768	255
Turkey, war with Russia.....	1770	245
Turkey, war with Russia.....	1826	250
Turkey, war with Russia.....	1877	263
Turkistan conquered by Tamerlane.....	1383	224
Typewriter invented	1714	243, 271

INDEX TO CHAPTER XI.

Event.	Year.	Page.
U. S. War of Revolution	1775	208, 269
U. S. Declaration of Independence	1776	227, 282
U. S. war with England commenced	1812	210, 263
U. S. war with England ended	1814	282
U. S. Columbian Exposition	1893	246
Utrecht, Peace of	1713	261
Vaccoli, battle of	1055	223
Valmy, battle of	1792	250, 262
Varna, battle of	1444	267
Vatican Library founded	1447	224
Venice, founded	452	265
Venice, Bank of, established	1157	249, 254
Vienna University founded	1365	218, 232, 272
Violins invented	1477	209, 250
Volapük introduced	1881	215
Wales subjugated	1283	267
Wall, Great Chinese, begun	B. C. 214	219
Watches invented	1477	209, 250
Waterloo, battle of	1815	282
Weissenburg, battle of	1479	225
Westminster Abbey consecrated	1065	218
Wire, Iron, first used	1349	250
Worcester, battle of	1651	261
Worms, Concordat of	1122	250, 272
Yorktown, battle of	1781	282
Zama, battle of	B. C. 202	214, 267
Zenobia vanquished by Aurelius	273	265

DATES REPRESENTING FOREGOING EVENTS.

B. C.	Page.	B. C.	Page.
1854	223	814	227
1556	231	776	227, 267
1506	222	753	227, 285
1492	222	751	265
1490	231	740	266
1453	222	675	226, 265
1431	231	660	226
1329	222	608	226
1106	222	598	226
1095	222	582	226
961	285	556	231, 267
878	214	550	222

B. C.	Page.
542	231
539	266
535	214, 230
525	214, 225
519	231
490	231
480	225
479	225
454	214, 268
451	221
447	224
443	224
431	231
413	224
410	221
405	224
404	214, 268
383	214, 224
343	214, 268
335	230
327	268, 269
312	224, 269
300	268
284	223, 266
280	223
264	267
260	230, 265
227	265
225	269
217	267
216	219, 269
214	219
212	214
202	214, 267
190	223
146	210, 269
86	219
71	267
63	266
60	230
55	223
48	265
43	265
42	231
31	285
25	223
19	231
A. D.	
64	284
70	265
86	219
121	214
196	257

A. D.	Page.
211	257
214	219, 269
216	219, 285
232	250
240	265
249	265
273	265
306	270
324	270, 276
325	258, 264, 265
390	259
393	214
410	221, 259
429	259
451	221
452	265
455	259
457	265
461	266
476	259
516	207
526	260
550	222
622	250, 260
635	209, 260
636	215, 261
647	261
651	261
698	250
710	261
713	261
716	266
732	250, 283
750	250
756	261, 270
760	266
792	262
812	263
829	250
861	263
862	210, 263
874	249, 263
877	263
878	215
886	251
896	251
919	251
937	266
992	251
1017	252
1025	223
1055	223
1065	218

A. D.	Page.
1066	217
1095	208, 222, 280
1106	222
1118	209, 253
1122	259, 272
1150	253
1157	249, 254
1166	217
1172	254
1174	249
1190	223, 254
1198	250
1203	254
1204	254, 270
1211	257
1212	216, 270
1213	216
1215	282
1220	267
1222	215
1224	267
1236	267, 272
1246	255
1248	272
1250	250
1265	218, 232
1266	217
1268	232, 255
1272	272
1280	223
1283	255, 267
1284	223, 272
1296	256
1298	256, 267
1299	256
1302	256
1312	217, 224, 256, 270
1314	216
1315	256, 270
1325	258
1329	222, 250
1331	215, 285
1333	215
1346	256
1348	256
1349	250
1351	232
1363	257
1365	217, 232, 272
1366	217
1367	257
1368	232
1369	209, 257
1383	224
1386	251
1391	272
1396	251
1403	247
1405	224
1409	247
1410	259
1412	270
1413	217, 224
1414	216
1415	216
1419	251
1421	233
1429	259, 267
1441	215
1443	224
1444	215, 267
1447	224
1451	232
1453	222, 247
1455	234, 259
1457	249
1465	218
1477	209, 250
1479	225
1480	225, 250
1492	210, 222, 250, 251
1506	222
1509	248
1510	270
1514	217
1515	270
1516	216
1517	252, 282
1520	235, 270
1521	233
1525	225, 270
1526	250, 260
1530	270, 272
1532	283
1535	248, 271
1545	272
1546	268
1551	250
1555	234
1582	226
1585	236
1588	284
1590	272
1598	226
1603	247
1605	210, 249
1608	226
1609	237, 247

A. D.	Page.
1614	249
1618	253, 271, 283
1620	210, 235, 283
1622	260
1632	272, 283
1635	209, 260
1636	209, 261, 271
1640	249
1642	238, 271
1643	249
1645	238
1647	261
1648	273
1649	250
1650	253
1651	261
1652	238
1653	247
1657	254, 268
1660	226
1666	217
1667	239
1672	254
1673	268
1675	226
1685	236
1690	240, 254
1694	249
1700	268
1702	241
1703	254
1704	254
1707	242
1709	237, 248
1710	261
1711	242
1713	261
1714	243, 271
1726	243
1730	244
1735	244, 248, 271
1737	244
1742	238
1745	238
1746	245, 255
1747	245
1752	238, 245
1753	227
1756	245, 261, 271
1757	245
1758	245
1767	239
1768	255
1769	245

A. D.	Page.
1770	245
1771	245
1775	208, 269
1776	227, 282
1777	245, 250
1780	250
1781	282
1783	255
1789	246, 284
1790	240
1792	250, 262
1793	246
1796	256
1798	256
1799	256
1802	241, 256
1805	210, 249
1807	210, 242
1811	242
1812	210, 256, 263
1814	227, 243, 249
1815	256, 282
1825	264
1826	243, 250
1830	244
1835	244
1837	244
1840	249
1843	249
1846	245, 256
1847	245, 282
1848	256, 271
1851	250
1852	245
1854	210, 223, 269, 273, 282
1856	245, 271
1857	245
1858	245
1861	210, 263
1862	263
1863	257
1865	218
1866	217
1867	257
1869	245, 257
1870	245
1871	245
1872	273
1874	263
1877	245, 263
1881	215
1889	246, 284
1893	246
1894	249

CHAPTER XII.

EVENTS. FACTS.

Events, considered in connection with Memory culture, may be separated into classes, in accordance with the vividness of the impression which various kinds of events are capable of producing—the particular *channels* through which the knowledge of events enters the mind determining the relative vividness of such impressions, and thus being the proper basis of classification. On this basis Events may be divided into three classes—Personal, Impersonal, and Historical.

Personal Events are those that we ourselves witness, or in which we participate, our knowledge of them thus not being derived from any exterior source.

Impersonal Events are those with which we have no direct connection, but which we learn from other persons who have knowledge of them, or through the perusal of current periodicals; being recent, they rarely possess more than ordinary importance.

Historical Events are those which may have influenced the destiny of a state or nation and are deemed worthy of perpetuation in History. While they may

be ancient, medieval or modern, yet the term "Historical" is considered to apply to events which happened prior to the time in which we live. A living man may have participated in an event which proves to be of historical import—but to *him* the event is a *personal* one. We may read in a newspaper the particulars of an occurrence which at the time seems of only passing consequence—and yet may turn out to be the forerunner of events which thrill the heart of a nation. The attack by John Brown and his companions on Harper's Ferry was considered at the time as only of local significance, but eighteen months afterwards the guns at Fort Sumter sounded the key-note of the Civil War. The levy by the British Parliament of a three-penny tax on tea seemed an unimportant matter at the time—but was it not the cause of the "Boston Tea Party?"—which in turn led to the War of the Revolution? The great philanthropist, Thomas Clarkson, when a student at Cambridge, had occasion to write a competitive essay on the subject of human slavery. By the time he had made the necessary research to become familiar with his theme, he was so profoundly impressed with the horrors of the slave trade that he resolved to henceforth devote his energies to its extinction. Though his efforts met with scorn and derision for a long time, he lived to see Parliament pass and carry into effect an act abolishing slavery in Great Britain and all her colonies.

Personal Events, being participated in by ourselves, are the most vividly impressed of all on the conscious-

ness, and are therefore the most enduring in the memory; Historical Events are the least so, as they are learned only through the medium of literature, their vividness of portrayal in the mind being mainly dependent on the strength of the imaginative faculty; while the knowledge of Impersonal Events is transmissible to the understanding by either of two channels—oral or written; thus that class of events comes next to Personal Events in order of retentiveness in the memory.

The faculty of recalling past events is often possessed in a remarkable degree by persons having little intellectual power. A farm laborer named George Watson, living in Sussex, England, who was unable to either read or write, could recollect every-day events from an early period of his life. He knew on what day of the week any given date fell, where he was, what he was doing, and the state of the weather.

A farmer named Daniel McCartney, who was living in 1870, had a remarkable memory of personal events, extending back to the early part of 1827, when he was less than ten years old. He could tell the day of the week for any given date, and the condition of the weather on that day. He could also recollect how he was occupied, and where, during each of those 15,000 days; and besides could give the date and day of all public events during that whole time which had come to his cognizance—and there were evidently few that had not done so.

The accuracy of McCartney's memory was com-

pletely borne out by examination, the various questions and answers being given in full in "The Journal of Speculative Philosophy" for January, 1871.

In 1896 there died in Murray County, Georgia, at the age of 94 years, a man named Evan S. Howell, who could, up to a short time before his death, give from memory the day and date of every important event that had happened since he was a boy. He recollected the pluralities by which every County, State and National election had been carried, and could give the names of all the candidates. He could tell from memory when the various lands and railroads in his state had been surveyed, and by whom. He frequently asserted that he could recollect the names of every man, woman and child that he had ever met—a claim that seemed to be well founded; and it was said of him by intimate friends that he never forgot anything he had ever seen or heard or knew to be fact.

While the memory of events carries with it to some extent that of the corresponding dates, yet the two are not inseparable—which is especially the case with Historical Events and their dates; the *events* may be recalled with the utmost readiness, even to the most minute detail, while the duration of the *dates* in the memory may be extremely uncertain. To insure the retention of both, an association must be formed between them, the proper method of securing which has already been set forth in Chapter 11.

No more apt illustration can be given of the best method of cultivating Memory of Personal Events

than is furnished in the "Memoirs" of Thurlow Weed, one of the most noted of American politicians, who flourished during the latter half of the first century of American Independence.

Here are his own words:

"Some of my friends used to think that I was 'cut out' for a politician, but I saw at once a fatal weakness. My memory was a sieve. I could remember nothing. Dates, names, appointments, faces—everything escaped me. I said to my wife, 'Catherine, I shall never make a successful politician, for I cannot remember, and that is a prime necessity of politicians. A politician who sees a man once should remember him forever.' My wife told me I must train my memory. So when I came home that night I sat down alone and spent fifteen minutes trying silently to recall with accuracy the principal events of the day. I could remember but little at first—now I remember that I could not then recall what I had for breakfast. After a few days' practice I found I could recall more. Events came back to me more minutely, more accurately, and more vividly than at first. After a fortnight or so of this, Catherine said, 'Why don't you relate to me the events of the day instead of recalling them to yourself? It would be interesting, and my interest in it would be a stimulus to you.'

"Having great respect for my wife's opinion, I began a habit of oral confession, as it were, which was continued for almost fifty years. Every night, the last thing before retiring, I told her everything I could re-

member that had happened to me or about me during the day. I generally recalled the very dishes I had for breakfast, dinner and tea; the people I had seen and what they had said; the editorials I had written for my paper, giving her a brief abstract of them; I mentioned all the letters I had seen and received, and the very language used, as nearly as possible; when I had walked or ridden—I told her everything that had come within my observation. I found I could say my lessons better and better every year, and instead of the practice growing irksome, it became a pleasure to go over again the events of the day. I am indebted to this discipline for a memory of somewhat unusual tenacity, and I recommend the practice to all who wish to store up facts, or expect to have much to do with influencing men."

This peep into the home life of one of the most prominent and influential men of his time is interesting, and the advice on memory culture given by one so well qualified to offer it by reason of an unusually extended experience is invaluable, and the method is recommended to all who are desirous of being able to recollect a long chain of personal events, from the most important down to the petty details of every-day life. To tell much means to remember much; he who discusses what he has seen, heard or read, will recollect it far better than if he simply thinks over it. As telling is not always possible, however, whatever is worth remembering of past events should be mentally reviewed so often that none of the essential details will be lost;

and if this be done with sufficient *attention*, the memory will eventually become so strengthened that it will retain the first impressions it receives for a surprisingly long period. As what is *seen* produces the most vivid impressions of all, and what is *read* the least so, due allowance should be made for this difference, and especial effort made to read with *attention* that which it is desired to remember, so as by aid of the fancy to realize in some degree how the event depicted must have appeared to an eye witness—thus applying in part, through the medium of the imagination, the vividness contributed by personal participation in the event.

And thus through Attention and Review may the end be accomplished of bringing towards perfection that faculty, one of the most grateful of all the possessions of the human mind, the Memory of Events.

FACTS.

An Event is a Fact, but a Fact is not necessarily an Event.

An Event implies *action*, while a Fact may be either active or passive. As considered with reference to memory culture, it will be assumed that a Fact is *passive*—that it is a truth, which has been proved scientifically or practically.

Facts are more difficult to recollect than Events; for, in the latter case, there is the powerful stimulus to help impress the memory, of *action*—which is not possessed by the former; in order, therefore, that nearly

as vivid an impression may be produced on the mind by Facts, as Events—greater concentration of the attention is required.

The way in which Facts may be best memorized is through Classification. Compare the housewife who has a place for everything and keeps everything in its place, with one who strews her household articles about in a hap-hazard fashion, without the least apparent regard for system, and you have an apt illustration of Method and Disorder. As well might a compositor distribute his type indiscriminately in one pile and expect to set it again with accuracy and dispatch, or a bank teller attempt to pay out moneys with quickness and correctness from a confused mass of coin and bills of all denominations, as a person expect to draw from his memory, at pleasure, facts which have been hurled into it at various times without the slightest regard to classification.

Let us suppose two men, of equal natural memory power, reading a book replete with miscellaneous facts, each person desiring to retain as many of them in his memory as possible. Both read the book with attention, but one relies entirely on the "natural" (so-called) retentiveness of his memory, making no effort to classify the various facts—while the other person puts each one carefully away in its proper pigeon-hole of the memory, promptly associating it with correlative facts already there. Suppose that a year afterwards each of these persons should be asked to tell all that he could of what he had read in the book mentioned—which one would

be able to recall the most? To this question there is but one answer: He who had classified his facts could probably recollect nearly all of them—while the other person would be able to recall but few, for want of association.

To illustrate the method of classifying: A person interested in learning about the most striking geographical features of the earth, ascertains that the loftiest mountain in Europe is Mont Blanc; of North America, Mt. St. Elias; of South America, Mt. Sorato; and of Asia, Mt. Everest, which towers to a height of 29,000 feet above the sea.

At other times he learns that the highest volcano in the world is Cotopaxi, in Ecuador, which is 19,500 feet above the sea—the oldest known active volcano, Stromboli, and the largest, Etna; and that Etna and Vesuvius are never active at the same time, the period of extreme activity in either being that of greatest quiescence in the other. How natural for facts like the above to cluster together in the memory!

Facts such as the following may be gathered at periods wide apart—and yet how natural the association between them!

We learn that the highest place on the earth's surface inhabited by man is Ancomarca, Peru, which is 16,000 feet above the sea; the lowest the valley of the Jordan, nearly a quarter of a mile below sea-level; and that the lowest inhabited spots below the earth's surface are some of the mines in Bohemia, 2000 feet below the sea. The latter fact is suggestive of heat, and we

find that the city situated nearest the equator is Quito, Ecuador; that fact, by contrast, suggests cold, and we learn that the most northerly town in the world is Hammerfest, Norway, and the most southerly Punta Arenas, on the Straits of Magellan; we also ascertain the curious fact that the former is no less than 1200 miles nearer the North Pole than the latter is to the South Pole.

How easily facts in Natural History like the following may be associated together: The Condor is the largest bird, and the Humming-bird the smallest, the Kestrel the swiftest, and the Albatross possesses the greatest endurance—one having been known to follow a ship for sixty-four days without being once seen to rest on the water.

We may read at different times that among musical composers the greatest were Beethoven, Mozart, Mendelssohn, and Wagner; the most prolific, Bach; the most productive opera composer, Piccini, who produced over two hundred operas; and the most fertile song-writer, Schubert, who wrote over twelve hundred songs during his short life of thirty-one years.

All of the foregoing illustrations show how easily and naturally facts may be associated together when properly classified.

In the memorizing of Facts the following plan is recommended:

When a fact is learned which it is desired to retain in the memory, promptly link it with other facts in the same class which are already known; if those be few,

associate it with all; if many, with the most important ones. Do not glut the mind with facts which are trivial, but memorize only that which is worthy of being preserved among Memory's archives and with which the mind and the heart are in sympathy.

It should always be borne in mind that in the storing away of facts, as of anything else, the most essential endowment is *enthusiasm*—for upon the degree in which that is possessed depends in a great measure the thoroughness and permanence of the results achieved. Where there is true enthusiasm easy is the pathway; and where native zeal is lacking, or is sluggish, an interest may be created and cultivated to an uncommon degree. By effort of will an enthusiasm can be *forced*, for the time being, which may not exist naturally, and associations made at such time are apt to remain well impressed on the memory.

Each individual should classify facts in the order of their interest and importance to *himself*, and the associations should be made with intelligence, earnestness, and thoroughness. If this be done he will not only eventually develop a rare capacity to memorize facts, but will always have a rich store of facts in his memory at ready command.

CHAPTER XIII.

LITERATURE. DRAMA. DISCOURSE.

"When we set ourselves to read a book what do we do? We place ourselves in communication with a living man. We go back with him to the time when he penned the volume. We think over the thoughts which he then thought, we sympathize with the feelings which he then experienced. * * *

If, then, you are admitted to the society of a wise or amusing man who gives instruction or entertainment in a winning and graceful manner, you think it important to be wakeful in his society and to catch and weigh every word; why should you not feel the same necessity when he speaks to you through the written page?

* * * * * * * * * * * * * *

Read with attention. This is the rule that takes precedence of all others. It stands instead of a score of minor directions. Indeed it comprehends them all, and is the golden rule. * * *

The page should be read as if it were never to be seen a second time: the mental eye should be fixed as if there were no other object to think of; the memory should grasp the facts like a vise; the impressions should be distnictly and sharply received."

NOAH PORTER.

"We have not *read* an author till we have seen his object, whatever it may be, as *he* saw it."

CARLYLE.

"Learn to read slow; all other graces
Will follow in their proper places."

WILLIAM WALKER.

"If we would fix in the memory the discourses we hear, or what we desire to speak, let us abstract them into brief compends, and review them often."

DR. ISAAC WATTS.

"A man may think of a handsome performance at his leisure. A short recollection brings it upon the stage, brightens the idea, and makes it shine as much as when it was first stamped upon the memory."

JEREMY COLLIER.

We now come to the consideration of how to best memorize the contents of a book—its *essence*, not its letter. That which reaches our mental perception through the medium of books (by which is meant, books having a connected plan or purpose throughout) may be divided into two general classes, one appealing largely to the *sensibilities*, the other chiefly to the *intellect*. The former is comprised chiefly in Biography, Narrative and Fiction, whose purpose is entertainment, rather than instruction, and which, being more easily retained in the memory than that which is intended purely to promote knowledge, will be considered first. Biography, Narrative, and Fiction, are *stories;* the first is the story of a life. Narrative is the story of a part of a life. Fiction is an invented story, a product of the imagination. Their perusal calls into exercise the imaginative faculty, the passions or emotions being affected far more than by other kinds of literature.

Because the imagination and passions are especially influenced by the reading of Biography, Narrative or Fiction, any production representing either of those

departments of literature is best memorized by a series of *mental pictures*, or images—and the same images which are formed at the original reading will, as a rule be reproduced on a second perusal or a mental review. As each scene is presented, each action portrayed, it should be pictured in the imagination with the utmost vividness that is possible; every essential detail should be included—not a feature omitted; and as each character is brought into view, the features and form, the general appearance, and even dress, should be imagined, so that the whole may seem a living reality. All this should be done with thoroughness as the reading proceeds; the imagination should fully grasp each situation ere the next is brought before the mental vision; occasionally the mind should again picture scenes that have been already presented, and when the book is entirely perused, it should be mentally reviewed from beginning to end. Illustrations should be studied with the closest attention, and the scenes which they represent vividly impressed on the mind, as they will be more easily grasped and more securely retained than what the imagination must invent. To memorize the number of each chapter which initiates a marked change of scene, or where new characters appear, will help to impress each scene more vividly on the mind. All this will require time, patience and attention, but when the book has been memorized in this way its contents will be a lasting possession, instead of merely impressions illy defined at the outset and fading rapidly as time passes on.

It may be that the real profit derived from reading a narrative or novel, however faithfully impressed on the memory its details may be, is insignificant compared with the benefit gained from the perusal of a book which is instructive rather than merely entertaining; but however that may be, it cannot be gainsaid that many a delightful hour may be spent in reviewing in memory the scenes and incidents of a well-written piece of fiction—in feasting the eye upon its woods and fields and hills and dales—in recalling those enchanting hours when the senses were enthralled by the stirring events which the magic touch of Fancy wrought into added life—in gazing on the faces and forms that once were so familiar! Who will say that an intimacy with the matchless creations of such masters of the pen as Dickens, Bulwer, or Scott—Hugo, Fielding, or Thackeray, is not an important part of a liberal education? Surely such characters as Ivanhoe, Glaucus, Col. Newcome, and Squire Allworthy must live in the minds and hearts of men as long as literature lasts; the sublime self-sacrifice of Thomas Carton, the true loftiness of character of Jean Valjean, must ever be an inspiration to a nobler life!—what a void in literature were there no Nydia, nor Hester Prynne, nor Little Nell! The conspicuous characters of Fiction—their deeds, their ambitions, their passions—are illustrations of the mainsprings of human action. To read to treasure in the memory the great works of fiction, affords the most grateful entertainment to the mind—is it not instructive also?

And Biography. The well-written biography of one who has occupied a higher plane than that of the ordinary man is usually both interesting and profitable; the various steps by which the person whose life is portrayed has risen above the level of mediocrity, may prove a valuable example to him who reads and reflects, and who would guide his pathway in life by the experience of one whose footsteps are worthy to be followed.

Finally, in Biography, Narrative and Fiction, read only that which is the best: do not burden the memory with writings which are of an inferior character: that is the best remembered which is the best written; and besides, why should one's mental dessert be of second-rate quality when the best may be just as easily obtained?

To memorize literature which appeals particularly to the intellect, the reasoning power must aid the memory. Gibbon, the historian, tells us in his *Memoirs* of the method he pursued in reading a new book. He first glanced at the title and looked carefully through the table of contents. He then endeavored to recollect all that he had ever learned or thought on the subject of which the book treated—thus placing his mind in the most receptive condition for the perusal of the book, and that he might afterwards be better able to determine how much his previous stock of knowledge had been augmented by the author.

When the student is about to read a book which is of an instructive, rather than entertaining, character,

and desires that its contents shall become impressed on his memory in the most vivid and enduring manner possible, he should

1st: Note the title of the book and the author.

2d: Read the preface carefully.

3d. Get an idea of the *general plan* of the work by examining the table of contents, and noting the relation to each other of the various chapters or divisions, which relation is usually conveyed by their titles.

4th: Read the first chapter slowly and attentively, endeavoring fully to absorb the author's meaning, and especially to grasp the principal ideas or propositions and understand their relation to each other, and associate the illustrations with the principles which they are intended to elucidate. Coleridge, in his *Aids to Reflection*, gives this golden advice: "Force yourself to reflect on what you read, paragraph by paragraph." Try to understand each phrase and sentence thoroughly before proceeding to the next. As the reading of each paragraph is concluded, impress its substance more strongly on the mind by mentally asking such questions as will cover the field of profitable inquiry, and answer them fully before the next paragraph is taken up; by these means a far more intelligent and enduring conception will be obtained of what the book contains than can be done by the ordinary superficial manner of reading.

The simple questions in the list below include all that is necessary; they are few and easily recollected

by the fact that each one is a monosyllable, the two first letters of all excepting the last being identical, and the last word consisting of the same letters as the first, but differently arranged:

Who?	Where?
Which?	When?
What?	Why?
	How?

It will be noticed that the questions in the first column pertain only to identity of the person or thing; in the second column the questions relate to Position or Locality, Time, Reason or Purpose, and Manner. Such of these questions as are pertinent should be applied as the reading of each paragraph is concluded, and when they are answered the mind is likely to apprehend quite clearly the contents of the paragraph, which should then be associated by the most convenient and natural method with that which is immediately antecedent. After the whole chapter shall have been studied in this manner an abstract of its contents should be written down from memory in the student's own language, framed in as clear, concise terms as possible, without tautology. This abstract should then be read over carefully and *destroyed*—the intrinsic object of writing it having been accomplished, *viz.*: to impress the information and ideas contained in the chapter more strongly on the memory.

Proceed with the second chapter in the same manner, and then link its leading features with those of

the first chapter, so that they will follow each other in natural order in the mind, and repeat the process to the end of the book; then write from memory a condensed abstract of the whole and read it through carefully, to be certain that no details of importance have been omitted. If in doubt regarding the accuracy of any particular portion of the abstract, turn to the book for verification; then, when the proper corrections shall have been made, if any are necessary, destroy the abstract, compelling dependence, for a review of what is contained, on the memory itself. It is a good plan to occasionally re-write an abstract of the book, verifying its accuracy if necessary, and each time destroying the abstract; and it is well when opportunity offers, to relate to others the principal details of the book, for they are thereby impressed still more deeply on the mind, their retention by the memory thus being rendered all the more certain. If this method be persevered in, the memory power will in time become so strengthened that the task of writing an abstract will be unnecessary, the various details, as they are reached in the course of perusal, becoming established in the memory by a sort of intuitive process, and being easily recalled in their natural order whenever desired.

A long and tedious way of accomplishing this object, the above method, may seem to the student—but one book *mastered* will be of more real benefit to him, both in regard to the perspicuity and permanence of the impressions received and also as contributing to

his intellectual growth—than a score of books which are merely "skimmed" over, or read without being properly digested. By reading or studying a book in the way suggested, the student not only familiarizes himself with the thought and purpose of the author, but at the same time improves his own thinking powers. He learns to discriminate, to cultivate his judgment, to translate others' thoughts into his own diction, to eliminate whatever is trivial or tautological; and with the added memory-power which such practice must bring, the student will eventually be able to master the contents of a book at a single reading—and that, too, without having to write a synopsis.

As an objection to this method of reading a book it may be urged with some plausibility that it involves an expenditure of time and labor which is deserved by but a small portion of the literature that issues from the printing-press, and as far as the reader is concerned, by only the especial books of whose contents he desires to become the absolute master.

To such objection the answer is made that the purpose of studying a book in so attentive and thorough a manner is not merely to master the contents of that particular book, but also to so cultivate the intellectual powers that the next book may be read more easily and intelligently, so that ultimately when a book shall have received only a single perusal the memory will retain all in it that is worth knowing. As the mechanic who constructs a complicated machine is able to build another with less difficulty than the original one:

as the newly-fledged attorney is able to conduct his second case with greater capability and confidence than the first: as the athlete who performs a difficult feat thereby gathers strength and skill to surpass what he has already done—so the student who in reading a book takes ample time and applies himself with sufficient assiduity and by the proper method to master its contents must, through such practice, grow in mental capacity and be afterwards able with less effort than before, to memorize a book of equal profundity, or with a like amount of exertion to master a work of greater depth.

Regarding the class of literature to be chosen for perusal, the student is advised to select only such works as are within his capacity to fully understand, and in which he takes a more than ordinary interest, always satisfying himself at the outset that the works are written by authors of repute.

And what shall be said regarding the omnivorous reading of the daily newspaper, which has become so prevalent as to be little less than a national epidemic? What effect does such reading have on the memory power?—is it beneficial or baneful?

The character of a large portion of the matter contained in the modern daily newspaper is such that, perchance, read to-day with avidity, to-morrow it will leave scarce a trace on memory's tablet. It does not instruct, nor entertain—it only gratifies a morbid appetite for the abnormal and sensational, which has grown to be a curious feature of modern city life. It is read,

not for the purpose of acquiring knowledge, nor of keeping informed on the significant events of the world's history, but only to satisfy a passing curiosity —not that it may be preserved in the memory; thus is encouraged a habit of forgetting, every succeeding act of which must inevitably tend to weaken the memory.

It is too true that the wide-spread decadence of memory power which exists in these days is largely due to the reading of trashy and sensational articles in the daily newspapers; and the responsibility for furnishing this sort of mental fare does not rest with the newspaper alone, which usually follows the policy of furnishing that which its readers seem to crave—*sensation;* but of what benefit, or even interest, is it likely to be half a year hence to have read to-day the particulars of some exciting murder trial, or daring train robbery, or sensational divorce suit, or brutal prize-fight? Of what significance is it a month hence that some cricket match or some foot-ball game was won by this or that college team? Are such things worth treasuring in the memory?

But notwithstanding the unwholesome tendencies of the modern daily newspaper, yet that it should not be read at all is by no means advised, but only that it be read with discrimination. Hamerton, in his *Intellectual Life*, says: "The art of reading is to skip judiciously. * * * In every newspaper that comes to hand there is a little bit that we ought to read; the art is to find that little bit, and waste no time over the rest."

To acquire this art it is necessary to cultivate what might be termed a "selecting" memory, which is no less useful for what it rejects than for what it retains. He who possesses a well-trained memory of this kind can so direct and control his attention while reading, that it will intuitively fasten upon that which has a vital bearing on the subject, avoiding with corresponding intuition that which is of minor import—thus economizing the mental energies, and at the same time placing in memory's custody only that which is worthy to be preserved.

This faculty can be developed by intelligent practice so as to be especially serviceable to the habitual reader of the daily newspaper and prevent the gradual weakening of his memory which must result from the continual acts of forgetting which indiscriminate reading ordinarily engenders. The possessor of a good "selecting memory" is able, while reading, to separate the wheat from the chaff with comparatively slight effort; what he reads at all he peruses with attention, instead of distributing his mental energies over all that happens to meet his eye, selecting his mental food from among a heterogeneous mass of reading matter it is likely that he will properly digest it, and as what may be designated the "rubbish" is not allowed to enter his consciousness at all, it cannot well have a deleterious effect on his memory.

DRAMA. DISCOURSE.

In every educated community some persons are likely to be found who possess superior aptitude in the following line of memory-culture: They can attend a dramatic entertainment or listen to a lecture or address, and retain every salient feature of it in the memory for years afterwards. They can with ease recall the plot of the drama, the principal characters and the most impressive scenes; or if they hear a discourse they can recollect the pith of the argument, and most of the illustrations or embellishments. The proportionate number of persons, however, in any community who can do this is small; not because there is a general lack of memory capacity, but by reason of neglect to improve those faculties which the memorizing of Drama and Discourse essentially calls into exercise, the thorough cultivation of which faculties cannot but yield rich reward for all the time and endeavor devoted thereto.

The ability to witness the performance of a first-class drama, or listen to an able discourse, and retain its essential details in the memory, is an acquirement which is often of great benefit in the practical walks of life—to say nothing of the world of delightful contemplation afforded in intervals of leisure; and to gain this achievement is not difficult—only intelligent application and persevering effort are necessary.

Let us assume that the student is visiting the theatre, witnessing the rendition of some great historical

drama. Scene after scene unfolds itself, each a living portrayal of events, thoughts, and emotions belonging to some turbulent period of the past, and all appealing powerfully to the sensibilities. As the play progresses he follows it with the keenest attention, and the most vivid image of the prominent details of the drama is imprinted on his mind at the conclusion of the performance.

The conditions are now most favorable for this image or perception to become permanently fixed in the memory; it can be if proper effort be made to preserve it—otherwise its duration in the memory is uncertain, for, however powerful the impressions may be, it is not sufficient that they be left to take care of themselves: they must be digested and the whole reviewed at intervals.

Shortly after the play has been witnessed the student should cause the whole to again pass before his mental vision, no detail being omitted that can possibly be recollected; in this way the habit of *thoroughness* will be cultivated. It is all the better to also describe the play to others, as that will cause the details to become more strongly impressed on the memory; Oral narration is always superior to mental review as a means of making impressions more lasting.

On a first endeavor to recall the incidents of a play, it is likely that only the main particulars will be recollected; but if the attempt be repeated it will be found that a larger proportion of the details can be recalled than before, and the proportion will increase with each

trial, until eventually all the essential particulars will remain fixed in the memory without the necessity of repetition.

The same method should be pursued in the case of Discourse as in that of Drama, and if persevered in the practice will be found not only of great value in an educational sense, but also highly interesting; and the opportunities, especially in cities, of witnessing theatrical productions and listening to discourses of various kinds, are so frequent that there need be little difficulty in obtaining abundant practice. A dramatic performance is the most easily recollected of all, and an argumentative discourse, as a legal or political address, or a sermon, the least so. In the former case scenery, action, and utterance all unite in the creation of a vivid impression, while in the latter case both scenery and action are wanting—it thus being necessary that those features should be supplied, as far as may be, by the imagination, spurred by increased attention. Next to a dramatic performance, an illustrated lecture is the most easily impressed on the memory, and next a plain lecture or an address on some interesting topic, and so on—the faculty of retention diminishing as the subject is more abstract.

In the development of Memory of Drama and Discourse the student need not expect that he can attain proficiency by a few rapid strides; he must progress by easy stages, advancing gradually from the easiest to the most difficult, and not attempting to memorize too much at any one time—especially at first. The

memory-power will continue to expand with properly directed practice, but its growth, to be enduring, must have a substantial foundation and advance by moderate degrees; the first tasks undertaken should be easy—even small—to be augmented as the capacity of the memory increases. Every exertion should be made to keep the attention riveted upon the subject in hand—whether it be a play or a sermon; but this should be maintained only so long as it can be done without fatigue; when the brain begins to feel wearied, all effort to longer concentrate the attention upon the subject should cease, and the brain be either allowed to rest, or its energies be diverted into other channels, which is often quite as beneficial. The poet has well said:

"Absence of occupation is not rest;
A mind quite vacant is a mind distressed."

—and it frequently happens that a complete diversion of the thoughts in a different direction is fully as restful to the mind as entire passiveness.

That no memorizing should be attempted when strict attention cannot be given, while true in the case of reading a book, is especially so in that of witnessing a dramatic production or in listening to a discourse, for the impressions derived from the two latter sources must be taken "on the wing," as it were, while in reading there is opportunity for reviewing that which the mind may not fully grasp at first. The opportunity to witness some celebrated play, or to hear some noted lecturer or preacher, may occur only once in a lifetime,

and the mind and memory should be so trained as to make the most of that opportunity—for what the mind and senses may receive on such an occasion, and the memory afterwards preserve, can well constitute an invaluable and enduring contribution to the fund of thought and fancy which the appreciative and provident mind is ever acquiring and storing away in the treasury of Memory.

While it is true that not every one is afforded the opportunity to often attend the theatre or listen to a lecture, it is also true that with the frequency of those opportunities decreases the natural inclination to improve them, which can be compensated for only by intelligent and persevering effort. Rarity and novelty inspire curiosity, which begets *attention*, the great key to success in memory-culture. Native enthusiasm decreases as the surroundings grow more fortunate, and the deficiency can be supplied only by intelligent effort and constancy of purpose; when this shall have been adhered to for a sufficient length of time, it will be found that a profound sermon can be recollected as easily and perfectly as was a simple play at first.

CHAPTER XIV.

ANECDOTE.

"And without anecdote what is biography, or even history?"

LOWELL.

The ability to treasure up an anecdote in the memory after once hearing or reading it, and to summon it forth at an opportune time, is one of the most valuable endowments of the disputant or the converser.

How pleasurable and stimulating is a conversation that is interspersed with spicy anecdotes, especially if they are *apropos!* into what an excellent humor are they likely to put the company, and what an added zest is given to the conversation! The man who carries in his memory a plentiful stock of good anecdotes which he can draw upon when the occasion justifies, is reasonably certain to be considered an acquisition to whatever circle of society he may wish to move in—provided that his anecdotes do not have a bitter or ironical allusion, but are happy illustrations of the topic of conversation, intended to please—not to pain.

Many a case before a jury has been won through the narration of a timely anecdote—many a victory achieved on the stump by the skillful wielding of pungent witticisms and the telling of entertaining stories. Many a dinner-party has been "set in a roar" by the utterance of some apposite *bon mot*—many a mute and spiritless gathering exhilarated by a few seasonable anecdotes. An apt, well-told story, often accomplishes far more than a protracted homily. A pathetic incident introduced in a sermon will frequently prove more effective than all the reasoning in the rest of the discourse. Illustrations from life, real or imaginary, engage the attention and excite the sensibilities where the most logical arguments and undoubted truths may fail.

One of the best recommendations of an anecdote is its brevity. It is a story boiled down so that its *gist* is brought prominently into view—being engirded by only the clothing of language necessary to give the story coherency.

Anecdotes seldom revert to the mind unbidden; they are suggested by something else—some other anecdote or chance remark, usually; even a word may suffice to call forth an anecdote which has slumbered in the memory for years. For an anecdote to be readily revived in the memory some *allusion* is necessary; if one in a company tells a story, that may remind some one else of another, which in turn suggests another anecdote to a third party—and so on, till perchance each of the company finds that he is able to recollect several additional anecdotes, and all through Allusion

—each anecdote suggesting others. But even under favorable conditions few persons can recall more than a small part of all the anecdotes which they have heard or read, for the reason that a large proportion of them, not having been systematically filed away in the memory, are so faintly established in the consciousness as to be beyond the possibility of revival. Many of those anecdotes the hearer might recognize were he to hear them again, but he cannot reproduce them from memory—and thus, as far as availability is concerned, they are as if he had never heard them.

If the proper method is adopted, almost any anecdote once heard or read may be indefinitely retained in memory, and be always available for use.

An anecdote is revived in the memory through either the similarity or contrast which its essence bears to the idea embodied in something else seen, heard or read. This idea may always be indicated by a *common noun;* but if the central idea, or some word which suggests it, be not recollected, the anecdote itself has escaped the memory past recall. Let us illustrate. A common noun is a *thing:* it has definite shape and appearance, and is usually a familiar object; an adjective represents *quality*, and a verb *action;* the ideas of quality or action cannot be grasped by the consciousness except in connection with the object or thing to which they are related; in order to form a mental image by using as a basis an adjective or a verb, an object or thing must be invented by the imagination as a foundation for the chosen quality or action. It is thus far

easier to form a mental image by using as a basis the thing itself than to work backwards and invent in imagination the thing which must embody certain quality or action. A common noun, then, being the substantial basis of every mental image, and an anecdote being a single scene—a "tale soon told," its dominant idea can always be represented by a single word—and that a *common noun.*

As, then, by the recollection of a single word can be revived in the memory the essential details of an anecdote, it perforce follows that the most efficient aid in the memorizing of anecdotes is the committing to and retaining in memory a list of words (common nouns) of different meaning and sufficient in number to supply a word to associate with each anecdote learned. This is the true secret of success in memorizing anecdotes—the method is infallible; each tale is hung on its proper "memory peg," and can be brought forth at will.

At first thought it may seem that the task is an extremely arduous one of committing to memory such a number of words that an association can be easily formed with every anecdote learned—that even were the words once learned many of them would afterwards be forgotten, and that the results would not justify the labor involved. But experience will demonstrate that such is far from being the case; if the words are arranged in a systematic manner the task can be accomplished with surprising facility.

The author has prepared lists of more than four hundred common nouns of different meaning, arranged, it is believed, in the most advantageous manner for memorizing. All of these lists should be thoroughly committed to memory before any associations with anecdotes are formed, and the way in which this can be best accomplished is by taking plenty of time in which to do the memorizing of each list of words, and fully mastering it before the next is even looked at. If ten or fifteen minutes be spent each day in study and review all the lists can easily be learned in a few weeks, when the student will be ready for memorizing anecdotes.

The way to then proceed is as follows: On hearing or reading an anecdote which it is desired to memorize, take a prominent word therein, suggesting the main idea (which word should be a common noun), and go over the list mentally until a word is reached to which the word selected to represent the anecdote is the most closely related in meaning or suggestion; then associate this word with the anecdote, and whenever the word is afterwards met with in mentally reviewing the list it will at once suggest the anecdote—and thus does the latter become a permanent possession of the memory.

When a number of anecdotes are heard on the same occasion it is well, while they are yet fresh in the memory, to write on a slip of paper the key word in each anecdote which it is desired to memorize, and these key words can afterwards be associated with the proper

words in the lists. It may sometimes happen that one word can be used with which to connect several anecdotes; it is suggested however, to avoid possible confusion, that no more than three or four anecdotes be associated with any one word.

The general plan which has been adopted in arranging the lists is as follows:

First: Words of one and two syllables only have been selected; and to facilitate their retention in the memory the monosyllables have been put in one place and the dissyllables in another.

Second: The first letter of every word is a consonant.

Third: The second letter is a vowel.

Fourth: The words in each "group" begin with the same consonant.

Fifth: The first vowel in each of the words in a "set" is identical.

Sixth: The first letter in the words of the various groups in each list, used in connection with the proper vowels, forms an acrostic. (A "list" is intended to mean any collection of six or more words having one key word or phrase; a "group" includes all the contiguous words in a list that begin with the same consonant and which represent one of the acrostical letters or words; a "set" consists of any three contiguous words in a group of six or more words, whose first and second letters are the same; the "sets" are confined to the first and second lists of Monosyllables, and the first and second lists of Dissyllables.)

Seventh: Words having the same vowel sound have, as far as possible, been placed together, the long sound of the vowel, where it occurs, being given first—as *a* in "mate," *e* in "mete," *i* in "mite," *o* in "mote," and *u* in "mute."

In all cases *w* and *y* are excluded.

Some of the acrostical words and sentences, when considered by themselves and without reference to their mission, may be thought extremely lacking in suggestiveness; but it should be borne in mind that if the simplicity of plan is to be preserved, the key words must consist of such words as can be constructed out of the material available; and if the construction is such that the fewest possible number of key words are employed, the task of memorizing them is reduced to a minimum. Only 31 key words are used to connect more than 400 common nouns, all of different meaning and having no natural association with each other—and if they are rendered easy of memorizing, it matters little that the words which link them together may not constitute pertinent phrases or sentences.

In List No. 1 of Monosyllables, it will be noticed that there are nine groups, each containing three sets of three words each, the second letter in each set of words being *a*, *e* and *i*, respectively.

On inserting the proper vowels the first letter in each group forms the acrostic

HONEST PROBLEM.

MONOSYLLABLES.

List No. 1.

	H*a*il	H*e*ad	H*i*ve
H.	H*a*ze	H*e*lve	H*i*ll
	H*a*rp	H*e*art	H*i*p
O.			
	N*a*il	N*e*ck	N*i*le
N.	N*a*ve	N*e*st	N*i*ne
	N*a*p	N*e*rve	N*i*p
E.			
	S*a*int	S*e*al	S*i*gn
S.	S*a*lt	S*e*at	S*i*te
	S*a*w	S*e*rf	S*i*ege
	T*a*rt	T*e*a	T*i*de
T.	T*a*nk	T*e*ar	T*i*e
	T*a*x	T*e*nt	T*i*le
	P*a*ste	P*e*n	P*i*ne
P.	P*a*lm	P*e*ar	P*i*g
	P*a*wn	P*e*rch	P*i*n
	R*a*ce	R*e*am	R*i*ce
R.	R*a*id	R*e*ef	R*i*nd
	R*a*ft	R*e*el	R*i*ng

O.			
	B*a*be	B*e*ad	B*i*ke
B.	B*a*rn	B*e*et	B*i*ll
	B*a*t	B*e*t	B*i*t
	L*a*ce	L*e*af	L*i*d
L.	L*a*ke	L*e*ague	L*i*ft
	L*a*the	L*e*ap	L*i*nk
E.			
	M*a*y	M*e*al	M*i*ne
M.	M*a*ce	M*e*at	M*i*te
	M*a*ze	M*e*sh	M*i*ll

List No. 2 consists of ten groups, each containing two sets of three words each, the second letter in each set being *o* and *u*.

When the proper vowels are inserted, the first letter in each group forms the acrostic

CHARMED STUDENT.

List No. 2.

	C*o*at	C*u*be
C.	C*o*ne	C*u*b
	C*o*re	C*u*ff
	H*o*se	H*u*b
H.	H*o*p	H*u*ll
	H*o*rn	H*u*t
A.		

	Roll	Rug
R.	Rome	Rum
	Rope	Rut
	Mop	Mute
M.	Moth	Musk
	Moor	Must
E.		
	Dome	Dun
D.	Dot	Dunce
	Doubt	Dusk
	Sore	Suit
S.	Soup	Suite
	South	Sun
	Toad	Tune
T.	Toast	Tun
	Toll	Tusk
U.		
	Dog	Dupe
D.	Doll	Duck
	Dove	Duct
E.		
	Nose	Nun
N.	Note	Nut
	Notch	Nurse
	Top	Tuft
T.	Tooth	Turf
	Torch	Turk

In List No. 3 there are eight groups of three words each, the second letter in each word being *a*, and, with the proper vowels inserted, the first letter in each group forms the acrostic

CLAM-FED SLAVE.

List No. 3.

	C*a*ke		S*a*ck
C.	C*a*b	S.	S*a*nd
	C*a*t		S*a*sh
	L*a*ss		L*a*d
L.	L*a*st	L.	L*a*mp
	L*a*th		L*a*nce
A.		A.	
	M*a*il		V*a*ne
M.	M*a*te	V.	V*a*n
	M*a*p		V*a*ult
		E.	
	F*a*ir		
F.	F*a*n		
	F*a*ll		
E.			
	D*a*ne		
D.	D*a*te		
	D*a*nce		

List No. 4 consists of six groups each of three words, the second letter of each word being *o*. The first letter of the various groups, when the proper vowels are inserted, forms the acrostic

PLOUGH CAR.

List No. 4.

	P*o*le		C*o*ast
P.	P*o*re	C.	C*o*mb
	P*o*t		C*o*il
		A.	
	L*o*af		R*o*ck
L.	L*o*ck	R.	R*o*d
	L*o*g		R*o*uge
O.			
U.			
	G*o*ng		
G.	G*o*rge		
	G*o*ut		
	H*o*od		
H.	H*o*ok		
	H*o*op		

In the next five lists attention is called to the following features:

There are in each list two groups of three words in each group; when the proper vowels are inserted the first letter in each group forms the words

GAME, DALE, SAFE, FANE and GALE,

respectively, there being four letters in the key word representing each list, the second and fourth letter being *a e* in each case.

The second letter in the words of the first list is *a*, in the second list, *e*, in the third, *i*, in the fourth, *o*, and in the fifth, *u*.

These lists are as follows:

List No. 5.

G*a*ge		M*a*rch	
G*a*uge	A.	M*a*rsh	E
G*a*g		M*a*sk	

List No. 6.

D*e*er		L*e*ash	
D*e*sk	A	L*e*ech	E
D*e*uce		L*e*nt	

List No. 7.

S*i*lk		F*i*fe	
S*i*ll	A	F*i*le	E
S*i*nk		F*i*lm	

List No. 8.

F*o*ur		N*o*ok	
F*o*rk	A	N*o*on	E
F*o*x		N*o*rth	

List No. 9.

G*u*m		L*u*ne	
G*u*n	A	L*u*mp	E
G*u*ide		L*u*ng	

In the following list there are four groups, each containing six words. The key word of each group consists of four letters, ending in ST preceded by the first four vowels in consecutive order. The key words are MAST, PEST, MIST, HOST.

List No. 10.

M*a*rt		S*a*fe	T*a*il
M*a*tch	A	S*a*il	T*a*pe
P*e*a		S*e*ct	T*e*am
P*e*g	E	S*e*ed	T*e*xt
M*i*nt		S*i*eve	T*i*er
M*i*le	I	S*i*x	T*i*the
H*o*e		S*o*ot	T*o*w
H*o*d	O	S*o*t	T*o*wer

In the next list there are five groups of two words in each group; the first letter of the words in each group, with the insertion of the vowels *o u* form the word "*Four*" in each case.

The second letter in the first group is *a*, in the second group, *e*, in the third, *i*, in the fourth, *o*, and in the fifth, *u*.

List No. 11.

F*a*rce	F*e*nce	F*i*b	F*o*nt	F*u*se
o	o	o	o	o
u	u	u	u	u
R*a*m	R*e*nt	R*i*b	R*o*se	R*u*sh

In List No. 1 of Dissyllables the same features will be noticed that are in the first list of Monosyllables, except that there are six groups instead of nine, the acrostic being

FAT LEOPARD.

DISSYLLABLES.

List No. 1.

	F*a*ilure	F*e*lon	F*i*ddle
F.	F*a*rmer	F*e*nder	F*i*lter
	F*a*ther	F*e*rret	F*i*nger
A.			
	T*a*riff	T*e*ller	T*i*cket
T.	T*a*rtar	T*e*mpest	T*i*nker
	T*a*ttoo	T*e*mple	T*i*nsel

	L*a*dder	L*e*mon	L*i*ght-house
L.	L*a*ttice	L*e*per	L*i*on
	L*a*va	L*e*vee	L*i*ly
E.			
O.			
	P*a*ris	P*e*kin	P*i*ckle
P.	P*a*rrot	P*e*rsia	P*i*cture
	P*a*tent	P*e*ru	P*i*llow
A.			
	R*a*inbow	R*e*view	R*i*ot
R.	R*a*zor	R*e*lict	R*i*nglet
	R*a*bbit	R*e*scue	R*i*ver
	D*a*iry	D*e*gree	D*i*al
D.	D*a*gger	D*e*pot	D*i*amond
	D*a*ndy	D*e*spot	D*i*pper

The features of List No. 2 are identical with those in the second list of Monosyllables, except that there are seven groups, instead of ten, the acrostic being

CRAFTY JUDGE.

List No. 2.

	C*o*bweb	C*u*ba
C.	C*o*llege	C*u*dgel
	C*o*met	C*u*tter

R.	Romance	R*u*by
	Rocket	R*u*bber
	R*o*orbach	R*u*ssia
A.		
F.	F*o*cus	F*u*lcrum
	Football	F*u*rlong
	F*o*otstool	F*u*rlough
T.	T*o*paz	T*u*mbler
	T*o*ry	T*u*rkey
	T*o*ilet	T*u*rtle
Y.		
J.	J*o*ker	J*u*ry
	J*o*ckey	J*u*ggler
	J*o*urnal	J*u*ly
U.		
D.	D*o*gma	D*u*blin
	D*o*llar	D*u*chess
	D*o*zen	D*u*mb-bell
G.	G*o*pher	G*u*sset
	G*o*tham	G*u*tter
	G*o*ggle	G*u*inea
E.		

List No. 3 is similar to the fourth list, of Monosyllables, except that there are four groups, instead of six; the acrostic is

PLEBEIAN.

List No. 3.

	Poem
P.	Porter
	Pocket
	Loadstone
L.	Lobby
	London
E.	
	Bolter
B.	Bombay
	Bottle
E.	
I.	
A.	
	Nomad
N.	Norway
	Nostrum

The next five lists are similar to Lists Nos. 5 to 9 of Monosyllables. The words formed by the first letter in each group, with the proper vowels inserted, are, respectively,

FATE, HATE, SAGE, FACE and PACE.

List No. 4.

F*a*mine		T*a*blet
F*a*shion	A	T*a*llow E
F*a*thom		T*a*vern

List No. 5.

H*e*brew		T*e*ndon
H*e*lmet	A	T*e*nnis E
H*e*rald		T*e*nor

List No. 6.

S*i*phon		G*i*ant
S*i*ren	A	G*i*bbet E
S*i*ckle		G*i*raffe

List No. 7.

F*o*rceps		C*o*ral
F*o*rest	A	C*o*lonel E
F*o*rfeit		C*o*usin

List No. 8.

P*u*pil		C*u*rler
P*u*dding	A	C*u*rrant E
P*u*lpit		C*u*rtain

List No. 9 corresponds with the tenth list of Monosyllables, except that *e a* are the vowels inserted, instead of *o u*. BEAM is the word formed by the first letter of the words in each group.

List No. 9.

B*a*llot	B*e*llows	B*i*valve	B*o*iler	B*u*shel
e	e	e	e	e
a	a	a	a	a
M*a*elstrom	M*e*erschaum	M*i*rror	M*o*nkey	M*u*shroom

List No. 10 consists of six groups of two words in each group. The second letter of each word is the vowel *e*. The key word is DRAM SHOP.

List No. 10.

D*e*luge	R*e*aper	A	M*e*lon
D*e*bate	R*e*sin		M*e*ter
S*e*ntry	H*e*athen	O	P*e*nsion
S*e*wer	H*e*ron		P*e*pper

As a proper conclusion to this chapter a few anecdotes will now be related, to illustrate the application of the foregoing method.

A certain sea captain who was about starting on a long cruise, determined to keep in his log-book a detailed account of all that happened on the voyage. It belonged to the first mate's duties to keep up this

record, which he did with due regard to all essential particulars. One day when the ship was in port the mate obtained leave to go ashore for a few hours, and the captain agreed to keep up the log-book during his absence. The mate improved the opportunity, to get drunk, and returned to the ship at night in a decidedly hilarious state. Next morning on looking at the log-book he found the following entry, in the captain's handwriting:

"First mate was drunk all day."

He protested to the captain against such an entry being made a part of the record, insisting that it might injure him. The captain, however, was obdurate, and said:

"Is it not true?"

"Yes, but it was unnecessary to state it."

"I consider that it was necessary; I am simply carrying out my purpose to keep an accurate record of what occurred on the voyage."

The mate had to submit, and made no further protest. The next morning the captain, on looking at the log-book, noticed the following entry:

"The captain was sober all day."

Filled with indignation, the captain demanded of the first mate why he had made such an entry.

"That is the truth, isn't it?"

"Of course it is; but there was no use of stating it."

"But, sir, I was simply carrying out your instructions to keep a full record of everything that happened on board!"

—The most significant word in the above anecdote is "Log," which will be found in List No. 4 of Monosyllables and second group.

Some years ago, during a season of unusually cold weather at a frontier army post, the commanding officer directed that limited rations of whiskey be issued to his men. This order was by no means displeasing to the garrison, and all went well until one day a soldier, whom we will call Pat Maloney, was put in the guard-house because of intoxication. The quantity of whiskey allotted to each man was insufficient to produce such a result, and a few inquiries developed the fact that the soldier had stolen the ration of a comrade. The commanding officer ordered the private to appear before him on the charge of stealing. Pat promptly appeared, and denied that he had stolen the whiskey, but admitted drinking the double allowance, and his subsequent drunkenness. When ordered to explain Pat delivered himself in this wise:

"Now, sir, ye see, it was this way: Mike Rafferty axed me to git his rations, an' I had me own requisition an' only wan bottle, an' so Mike's ration had to be poured atop o' mine. Now, sur, how could I help meself? Me own whiskey was in the bottom o' the bottle, an' how could I get at it but by dhrinkin' Mike's first? I lave it to yees if that was a stalin'!"

—This anecdote would be easily suggested by the word "Bottle," which will be found in List No. 3 of Dissyllables and the third group.

Here is an incident that is said to have happened during the civil war:

A zealous chaplain called on a certain Colonel, better noted for his bravery than his piety, to talk about the religious interests of his men.

"Colonel," said he, "from all accounts you have a brave lot of men in your regiment."

"Well, sir, I think I have."

"Do you think their religious instruction is fully observed?"

"Well, I can't say as to that, sir."

"A great interest has been awakened in Col. Brown's regiment, and ten men have been baptized."

"Is that so?" asked the Colonel.

"Yes, Colonel, it is true."

"Sergeant, have fifteen men detailed to be baptized; I'll be hanged if Col. Brown shall get ahead of me!"

—The word "River" would recall this anecdote; it will be found in List No. 1 of Dissyllables, the fifth group and third set.

In the old slavery days a darkey had a habit of appropriating one of his master's turkeys every now and then, for his Sunday dinner. He was caught one day and brought before his master, who said sternly:

"Sambo, did you steal that turkey?"

"Well, sah, I can't 'zactly say ez I did steal it, but I took it, sah."

"What did you mean by taking what didn't belong to you?"

"Well, massa, I didn't see ez dar was any harm in takin' it; it was only changin' de *form* of massa's property—he has less turkey, but *moah niggah!*"

—The most important word in this anecdote is "Turkey." It will be found in List No. 2 of Dissyllables, the fourth group and second set.

An Irishman, whose chief occupation was poaching, was being tried by a jury for stealing a goose. He was about to be convicted on circumstantial evidence, when a brother poacher, also an Irishman, appeared and testified that the goose was his, and had been ever since it was a gosling. This testimony was so positive that the jury had to bring in a verdict of acquittal.

Some time afterwards poacher No. 2 was arrested and brought to trial on the charge of stealing a gun. Just in the nick of time his friend appeared and whispered in his ear: "Don't yez be afraid, Pat, I'll get ye off;" whereupon he went into the witness-box and testified that the gun was his and had been ever since it was a *pistol!*

—The word "Gun" would certainly recall the above anecdote; it is in List No. 9 of Monosyllables, and the first group.

A man in Texas was accused of stealing a horse. The supposed culprit was promptly tried, found guilty and lynched. Scarcely had this been done when the lynchers found, to their horror, that they had hanged the wrong man. Filled with remorse they started at once for the home of the widow to break the sorrowful news as gently as possible and implore forgiveness.

Arriving at the house the party entered, and the chairman, twirling his hat in his hand and very much embarrassed, accosted the widow thus:

"Marm, we've jest hung your husband fur stealin' a hoss, an' come to find out, he aint the right man. Thar aint no use o' talkin', marm, the joke is on us!"

—What more suggestive word to revive this anecdote than "Gibbet;" which is in List No. 6 of Dissyllables and the second group.

Here is another story of a somewhat similar character:

A premature explosion in a quarry killed one of the workmen. One of his comrades was detailed to break the sad news to the widow, and was expressly cautioned to do so in as delicate a way as possible, as she was known to be a very tender-hearted woman. Reaching the home he spoke thus:

"Did ye hear that foine blast, mum?"

"Indade I did, and it frightened me."

"Sure, mum, and I wish I had been here to purtect yez; it's a foine woman like ye I'd like to purtect as long as I live, so I would."

"Wot do ye mane by talkin' like that, an' me married to a foine man like Mike Flannigan?"

"Och, an' ye needn't moind about him any more, mum—he was killed by the blast!"

—The word "Fuse would easily suggest the above anecdote; it is in List No. 10 of Monosyllables and the fifth group.

The story is told that Benjamin Franklin once ar-

rived at an inn on horseback, on a very cold day. Hitching his horse, he went inside to warm himself, but found that he could not get anywhere near the fire, every chair being taken. Turning to the hostler, he said: "I wish you would get half a peck of oysters in the shell, and feed to my horse." All the occupants of chairs at once rushed out to see the horse eat oysters. The hostler soon returned and said: "Why, sir, your horse won't eat the oysters at all!"

"Is that so?" said Franklin, now comfortably seated at the fireplace; "He don't know what's good; bring 'em to me then and I'll eat 'em!"

—In List No. 9 of Dissyllables, and the third group, will be found the word "Bivalve," which is certainly suggestive of the above anecdote.

Sydney Smith once presided at a meeting held to raise a fund to complete a church. Just before the contribution plates were passed around, the distinguished divine made an earnest appeal, stating the urgent necessities of the case, and concluded by complimenting Englishmen on their liberality and love of their species. The appeal did not meet with a very generous response, however, and as the witty minister glanced at the lean looking plates, he arose and said:

"I desire to correct a statement made a few moments ago; I should have said that Englishmen are noted for the love of their *specie!*"

—The word "Dollar" would recall this anecdote to mind; it will be found in List No. 2 of Dissyllables, the sixth group and first set.

A prominent merchant in a certain city was importuned by his two hopefuls, aged respectively eight and ten years, to buy them a dog, the chief reason urged being that they would train him to be a good watch-dog. The father finally consented and the dog was duly procured, the boys forthwith taking the most lively interest in his training. One evening not long afterward the father happened to be out, and returned unusually late. The night was dark, and on reaching home he was greeted in the most energetic fashion by the dog, who treated him with such marked discourtesy that he was confined to the house for several days. On the day after the adventure, one of his business partners called to inquire if any mishap had befallen him. He was met at the door by one of the youthful dog trainers, who told him the particulars of the unfortunate occurrence, upon which the caller expressed his regret at the mishap, and remarked that it was a most unpleasant experience for the father.

"Yes," said the enterprising youth, "it was pretty tough on dad, of course—but then, you know, it was great practice for the dog!"

—Surely nothing could be more suggestive of this anecdote than the word "Dog," which will be found in List No. 2 of Monosyllables, the eighth group and first set.

A story is told of a Hebrew gentleman on his death-bed. His physician was in attendance and had just conveyed to his patient the unwelcome tidings that his case was hopeless.

"Vell, doctor," said the latter, "if I must die, I die gontendet anyhow—my life vas insuret for ten tousand dollars."

"Well, that will leave your wife and family in very comfortable circumstances, the assurance of which will of course be a great comfort to you. Now, by administering powerful tonics I can probably keep you alive for a week or so longer."

"For Heaven's sake, doctor, don't do it; der bremium comes due der day after to-morrow!"

—The above anecdote will be readily recalled by the word Hebrew, which occurs in List No. 5 of Dissyllables, and the first group.

An Irishman was arrested on the charge of committing some grave criminal act, and on being brought before the court felt very uneasy, and complained bitterly that he should be placed in such an awkward position so far from his home and friends. The Judge, a very kind-hearted man, said to the prisoner:

"Young man, you are arrested on a very grave charge, but you can rest assured, although among strangers, full justice will be done you."

"Upon me word," groaned Pat, "an' it's the fear of that same that throubbles me!"

—This anecdote would be easily revived through the word "Felon," which may be found in List No. 1 of Dissyllables, the first group and second set.

An Irish student, who was attending the University of Edinburgh, called upon a celebrated teacher of the harp, and asked his terms for giving a few lessons. The

harp-teacher told him that his customary charges were two guineas for the first month and one guinea for the second.

"Then, be me sowl," replied the quick-witted Hibernian, "I'll come in the second month!"

—The word "Harp" would suggest this anecdote; it will be found in List No. 1 of Monosyllables, the first group and first set.

A well-to-do Kentuckian, who was interested in quite a number of industries, among them being that of running a distillery, was attending church one Sunday, when the minister preached a powerful sermon against the evils of intemperance. After the services were over, one of the Kentuckian's friends approached and said:

"Well, Colonel, the preacher gave a pretty strong talk on a subject that interests you, didn't he?"

"Oh! well, I didn't mind that—It's a mighty poor sermon that don't hit me somewhere!"

—This anecdote would be remembered by the word "Rum," which is in List No. 2 of Monosyllables, the third group and second set.

In a crowded tavern a Judge and an Irishman were obliged to occupy the same bed.

"Well, Pat," said the Judge; "you would have had to stay a long time in Ireland before you could have slept with a Judge."

"Yes, an' yer honor would have to stay a long time in Ireland afore you'd ha' *ben* a Judge!"

—The word "Tavern" would easily suggest the

above anecdote; it will be found in List No. 1 of Dissyllables, and the second group.

"Is your father at home?" asked a man of a boy.

"No, he's down town, but you'll find the grindstone out in the shed."

"Why, I don't want to use the grindstone; what makes you think I did?"

"Oh! because pa says you never come here unless you have an axe to grind!"

—This anecdote would be easily suggested by the word "Helve," which is in List No. 1 of Monosyllables, the first group and second set.

A certain wag who was somewhat awkward in his movements, when at a ball was accosted by a man in a state of intense excitement, who said:

"Sir, you stepped on my partner's foot just now, and I demand satisfaction!"

"All right; my wife sits over there; you can go and step on her foot!"

—The word "Dance" would recall the above anecdote; it will be found in List No. 3 of Monosyllables and the fifth group.

The foregoing anecdotes will illustrate the method of memorizing anecdotes which has been set forth in these pages. It is not to be supposed that the lists given will always contain the precise word which is the duplicate of the key-word representing the anecdote—it is not necessary that they should: a simple *allusion* will impress the anecdote on the memory so

that it may be recalled at will. Thus, if an anecdote were told about a horse, the word "Jockey" would be a sufficient allusion; "Dairy" would be an ample reminder of a story about a cow; "Cutter" would suggest snow; "Hull" would suggest a ship; "Hive" would remind one of bees or honey; "Curler" would suggest ice, and "Hop" ale or beer; "Focus" would indicate a telescope, and "Loadstone" a compass; "Last" would signify a shoe, and "Goggle" an eye; "Pawn" would suggest chess, and "Mite," cheese; "Razor" would indicate a barber, and "Nostrum" a doctor; "Gong" would suggest a bell, "Rut" a road, and "Toll" a bridge or ferry; "Lent" would refer to any denomination which observes it; the name of a city will suggest the country in which it is located—or that of a country an inhabitant of it.

One thing may also suggest its opposite; thus a dwarf may be indicated by "Giant," a teacher by "Pupil," or a vassal by "Despot;" "Noon" would signify midnight, and "July," January; "Tear" might suggest a smile, "Doubt," certainty, and "Farce" a tragedy; "Gorge" would indicate a mountain, "Forest," a plain, and "River" a brook; "Dome" would refer to a cellar, "Hut" to a mansion, and "Famine" to a feast; a zephyr would be suggested by "Tempest," genius by "Dunce," success by "Failure"—and so on.

It may sometimes happen that either one of several words would answer to form an association with an anecdote, and it may be thought that confusion would

be likely to result on that account—but such is not the case; each anecdote becomes identified, not only with the word itself, but also with its location in the particular list to which it belongs, and as the word is recalled the proper anecdote with which it is associated is at once recognized.

Through the aid of these lists Riddles, Charades, Conundrums, etc., may also be memorized, and he who wishes can easily carry in his memory a supply ample for all occasions.

The student can rely implicitly on the entire practicability of the foregoing method; it has undergone the most thorough experiment, and has proved to be the only reliable method of accomplishing the desired purpose; without this method, or one similar to it, comparatively few anecdotes can be effectually retained in the memory, and those can be brought forth only by aid of a chance allusion now and then; with it, every anecdote that has ever been memorized can be recalled at will.

CHAPTER XV.

DICTION.

"I can repeat whole books that I have read, and poems of some selected friends, which I have liked to charge my memory with."

BEN JONSON.

"It is impossible for a man to be a great writer or speaker without a great memory; and it must have, besides other qualities, that of being a verbal one."

PROF. MATHEWS.

Memory of Diction, or "Verbal" memory, is the power of recollecting anything uttered or written, in the precise diction in which it was originally heard or read. While the term "Verbal Memory" may include, in its general application, all spoken or written language, of whatever form, character, or quality, yet it will be here applied only to that class of literary production which is of more than ordinary merit and worthy to be treasured in the memory in its exact terms.

A memory replete with noble and beautiful thoughts culled from the teeming treasury of litera-

ture, cannot but confer on its possessor a perennial inspiration and delight beyond the power of language to portray. Who that can recall word for word even a few of the rare gems of literature does not earnestly wish that he were equally familiar with many more? Happily, in the memorizing of the choice thoughts of master minds desire increases with acquisition, and as new treasures are gained the mind expands and its best impulses are quickened. He who has garnered in his memory an abundant store of precious thoughts and glowing fancies, may well felicitate himself that the effort which he has thus devoted to the enrichment of his mind will be compensated for an hundred-fold throughout the years of life. Often in moments of sweet communion with the past there will be mirrored in the imagination the subtle thought, the glowing sentiment, the gorgeous imagery that once burst forth from the soul of genius into living language, to never be obliterated from the page of literature or the memories of men, but to ever shine resplendent in the realm of Thought and Fancy through the untold years of Time.

Only the best and greatest products of the human intellect deserve a permanent place in the memory; they may be serious, or they may be humorous, so that they are of the best of their kind. The mission of the humorous is to divert, that of the serious is to exalt; the former may soothe and cheer the heart that is weary or sad, the latter expands the sensibilities; it

exalts, it inspires; it furnishes food for profound reflection; it unfolds the higher powers of the mind and heart.

There are some people in whom the possession of good "verbal memory" seems inherent; they can "learn by heart" with ease, and their power of retention is such that they are able to reproduce, almost at will, with scarce an exception, everything which they have ever committed to memory. Others have great difficulty in recollecting in its exact terms *anything* which they have read, although they may be able to recall the *substance* of what they read quite distinctly. It seems as if a strong imaginative faculty is a prerequisite to the possession of good "verbal memory," that the two are inseparably related; it is at least certain that the gift of good "verbal memory" is almost invariably associated with a lofty sense of the noble and beautiful in language, with a love of tender sentiment, of profound thought, of all that constitutes grace and grandeur of expression; it is also true that a weak verbal memory can be strengthened to a surprising degree, which must also expand the capacity of appreciating the power and the beauty of form into which language can be moulded. Actors, elocutionists, and opera-singers, from the nature of their vocation, acquire great proficiency in the art of "Verbal Memory;" and not a few lecturers, clergymen, and others who speak in public memorize their discourses throughout, which may be considered the very acme of proficiency

in the art of "Verbal Memory," as it is commonly much less difficult to memorize another's thoughts than one's own, the familiarity with the latter being a hindrance rather than a help, to their memorizing.

In ancient times, when there were few writings, most remarkable memory powers were often attained. The Rig-Vedas, the sacred book of the Brahmans, containing more than 150,000 words, were preserved orally, and handed down from generation to generation in the same manner for thousands of years, and to-day there are many thousands of Brahmans who, if all the written copies of the Hindoo religious books should be destroyed, could replace them from memory, word for word.

In modern times many instances are recorded of strong powers of "verbal memory," and it will be interesting to cite some of the most notable examples.

Thomas Fuller was known as a "perfect walking library." It is said that he could repeat five hundred disconnected words after hearing them twice, and a sermon after one hearing.

The distinguished Wesleyan divine, Adam Clarke, had such a phenomenal memory, even when a boy, that after listening to a sermon lasting an hour he could go home and repeat the whole, word for word.

Bishop Jewell, who lived in the sixteenth century, could repeat anything that he had written, after one perusal. He was known to commit his whole sermon to memory after the first church bell had commenced ringing.

John Wyndham Bruce, a noted classical scholar, knew all the plays of Æschylus by heart, and could name from memory the exact location of any line in the Odes of Horace.

Rev. E. Coleridge memorized the entire works of Homer, Horace, and Virgil.

Gilbert Wakefield, a theologian and savant, knew by heart the works of Virgil and Horace, nearly all of Homer and Pindar, and entire books of the Old and New Testament.

It is stated on the authority of Rev. B. J. Johns, chaplain of the Blind Asylum, London, that a young man who was an inmate of the institution could repeat not only the whole of the 150 Prayer-book Psalms and a large number of other psalms and hymns, but also a great many modern poems, including Goldsmith's "Deserted Village," and the whole of "Paradise Lost," with all the marginal notes and Milton's biography.

Francisco Suarez, a noted Jesuit, author of several religious and philosophical works, is reputed to have known by heart the whole of St. Augustine's writings, comprising eleven large folio volumes. In a sketch of Suarez' life which accompanied his works, it is stated that if any portion of St. Augustine were misquoted in his hearing he could at once, from memory, give the correct quotation and its location, no matter what the subject might be.

Lord Macaulay, on one occasion when crossing the Irish Channel, repeated to himself the whole of "Para-

dise Lost." At another time, while waiting for a post-chaise, he happened to pick up a country newspaper containing two poems, named "Reflections of an Exile," and "Parody on a Welsh Ballad." He read them through once, and never gave them a further thought for forty years, when he repeated them both without the omission of a single word.

Dr. Samuel Johnson had a power of "verbal memory" that often astonished his best friends. His friend Dr. Hawkesworth had just completed a poem called "Ode on Life." Being invited to visit a friend in the country, he took the poem with him, for the purpose of reading it to his friends and re-touching it where necessary. Dr. Johnson was also one of the party, and the author read the poem to him and asked his opinion of it. The doctor replied that he couldn't properly determine on hearing it read once, and requested a second reading. Dr. Hawkesworth complied, after which Johnson read the poem himself, complimented the author very highly and returned it. While at breakfast the next morning the subject of the poem was naturally a prominent topic of conversation, and Johnson, after expressing his hearty admiration of it, said that he had only one criticism to make, which was that he had doubts of its originality. Hawkesworth, feeling very much nettled, challenged his friend for proof of the truth of that assertion, who thereupon repeated the whole poem (which was not a short one), omitting only a few lines. On being asked what he had to say

now, Hawkesworth replied: "I have only this to say: that I shall never again recite a composition of mine in your presence, for you have a memory that would convict an author of plagiarism in any court of literature in the world!"

Pierre Gassendi, a French philosopher, who was appointed professor of rhetoric at Digne, at the age of sixteen could recite 6,000 Latin verses from memory. As an exercise he used to repeat every day 600 verses from different languages.

Antoine Muretus, a noted French humorist, tutor to Montaigne, relates that in the course of his travels about Europe he met at Padua a young Corsican named Molino, who was prosecuting his law studies at the university, and was reputed to possess an extraordinary gift of memorizing disconnected words. Molino consented willingly to undergo a test of his powers, to be applied by three distinguished Venetians. The young Corsican stood all the while with his attention deeply fixed and his eyes half closed. They read to him Latin and Greek; barbarous, significant, and non-significant words until wearied. Molino without the slightest hestitation repeated them all correctly, both forward and backward. Then, to show how thoroughly his memory had retained every word, he repeated each alternate word — the first, third, fifth, and so on, until his listeners were thoroughly convinced that the reports which had reached them concerning the young Corsican's powers had not been ex-

aggerated. He then stated that he could memorize 36,000 disconnected words and retain them a year. On being questioned as to how he had developed such a wonderful faculty, he replied that he had learned the art from a French teacher on mnemonics.

Coming down to more recent times we learn that Justice Story, Clay, Calhoun, Sumner, Edward Everett, Wendell Phillips, Secretary Stanton, Conkling, Blaine and other distinguished men had remarkable verbal memories. Stanton could repeat any named chapter from almost any of Dickens' books. One of Judge Story's intimate friends said that his brain was a "gigantic reference library." Conkling could repeat selections from the classics by the hour. His principal speeches were carefully committed to memory, the memorizing of his great speech in New York during the Garfield campaign being an especially wonderful achievement.

Blaine generally knew, before delivering an important speech, exactly what he was going to say and how he was going to say it. On the occasion of his last appearance in Rochester, New York, he sent for an expert stenographer, who came to Mr. Blaine's private room in the hotel, where the ex-Secretary, slowly pacing back and forth in the room, deliberately thought out and dictated a speech. A type-written copy of the reporter's notes was taken to the newspaper offices, and a few hours later the distinguished statesman delivered the speech, word for word, as previously re-

ported. Between the time when the speech was dictated and its delivery, Mr. Blaine received many callers, and his thoughts were more or less diverted in other ways, but his memory did not fail him in the slightest. Blaine often repeated whole bills under discussion, after one reading.

Col. John R. Fellows had a phenomenal memory. In the most prolonged and intricate cases he took no notes whatever of the testimony, depending entirely on his memory to review the same at the proper time, which he invariably did with the most unfailing accuracy. He possessed a remarkable verbal memory also. Scott was his favorite author, from whose works he could quote, off-hand, for hours at a time. He could recite the whole of "Marmion" and "Lady of the Lake," which he had committed to memory in two or three readings.

In June, 1896, John G. Carlisle, Secretary of the Treasury, delivered an address at the Auditorium in Chicago, which consisted of nearly 10,000 words, including numerous and extensive marshalings of groups of figures, setting forth many columns of percentages and requiring for its argument ratios and equations relating to wages, values of commodities, the fluctuations of currency, and voluminous statistics affecting labor and life in various countries. The address was delivered without reference to manuscript, or even to notes, except in two instances of minor importance, and was delivered without hesitation, in an earnest

and forcible manner. The entire speech was in print before Mr. Carlisle appeared on the platform, and not a word was altered in the delivery.

In the same year a revivalist named William Cullen Hicks astonished the people in various parts of Kentucky, where he was preaching, by his familiarity with the Bible. He could recite the whole Bible, with the exception of the Psalms. He could start at any part of any chapter and go either forward or backward without hesitation.

An instance of remarkable precocity is that of Ethel Carroll, of Oakland, Cal. In 1896, when four years of age, she was taken to an entertainment and after its conclusion was asked if she remembered a certain recitation, remarkable for its length and beauty; without the slightest hesitation she recited the whole piece correctly. She can recall, weeks and even months afterwards, every word of a conversation, however long, including all the names, dates, and figures mentioned.

Many other examples of strong "verbal memory" might be given, but the above will suffice for purposes of illustration. In considering the cultivation of Memory of Diction, one of the first questions to arise is: "Which is the less difficult to memorize, Poetry or Prose?" Poetry is memorized with less difficulty than Prose, for two reasons: Poetry has Rhyme and Rhythm —neither of which is possessed by Prose. Poetry will therefore be considered first. In order that the student may prosecute intelligently and systematically the study and practice of memorizing poetry, he should

be well acquainted with the details of poetical form and construction—an outline of which may be useful to some students and is here given.

Poetry may be divided into two classes, Verse and Blank Verse.

Verse is metrical language which rhymes.

Blank Verse is metrical language without rhyme.

Verse possesses three properties: Rhythm, Meter, and Rhyme.

Rhythm is the periodical recurrence of accent.

Meter is the measure of such accent.

Rhyme is repetition of sound in the last accepted syllables or words in two or more lines of a stanza.

Every line of Verse consists of one or more divisions or measures, each properly containing one accented syllable or word, together with either one or two unaccented syllables or words. Each of such divisions is termed a Poetical Foot; the number of poetical feet in each line of a stanza in Verse determines the kind of Meter.

There are four kinds of Poetical Feet: the Iambus, the Trochee, the Anapest and the Dactyl.

An Iambus consists of two syllables, the second one being accented, as De<u>lay</u>, Con<u>vey</u>.

A Trochee consists of two syllables, the first one being accented, as <u>Tem</u>pest, <u>Sun</u>shine.

An Anapest consists of three syllables, the last one being accented, as We re<u>joice</u>; It is <u>night</u>.

A Dactyl consists of three syllables, the first one being accented, as <u>Beau</u>tiful, <u>The</u>atre.

There are also other poetical feet — such as the Spondee, which consists of two long syllables, as Dark days—the Pyrrhic, consisting of two short syllables.— and others seldom used.

The various kinds of meter are as follows:

Monometer is a line of one foot, as:

Fearfully,
Tearfully,

Dimeter is a line of two feet, as:

"Touch her not | scornfully,
Think of her | mournfully;"

Trimeter is a line of three feet, as:

"I am out | of human | ity's reach,
I must fin | ish my jour | ney alone;"

Tetrameter is a line of four feet, as:

"There is | no death! | the stars | go down
To rise | upon | some fair | er shore;"

Pentameter is a line of five feet, as:

"True wit | is na | ture to | advan | tage dressed,
What oft | was thought, | but ne'er | so well | expressed."

Hexameter is a line of six feet, as:

"His heart | is sad, | his hope | is gone, | his light | is passed;
He sits | and mourns | in si | lent grief | the ling' | ring day."

Heptameter is a line of seven feet, as:

"Loud hissed | the sea | beneath | her lee, | my lit | tle boat | flew fast;
But fast | er still | the rush | ing storm | came borne | upon | the blast."

Octometer is a line of eight feet, as:

"And the | Raven, | never | flitting, | still is | sitting, | still is | sitting
On the | pallid | bust of | Pallas, | just a | bove my | chamber | door."

Each of the forms of meter above named refers to a single line of verse, and no more—the number of feet in one line not necessarily being the same as in another.

In Iambic Verse there is what is known as Long, Short, and Common Meter, the terms being used chiefly in connection with church music, a stanza consisting of either four or eight lines—usually the former.

A Long Meter stanza contains four feet in each line, as:

"Oh! ev	er thus,	from child	hood's hour
I've seen	my fond	est hopes	decay;
I nev	er loved	a tree	or flower
But 'twas	the first	to fade	away."

In a Short Meter stanza the two first lines and the last contain three feet each, and the third line four feet, as:

"Beyond	this vale	of tears	
There is	a life	above,	
Unmeas	ured by	the flight	of years;
And all	that life	is love."	

In a Common Meter stanza the first and third lines contain four feet each, and the second and fourth lines three feet each, as:

"Ah, hap	py hills!	ah, pleas	ing shade!
Ah, fields	beloved	in vain!	
Where once	my care	less child	hood strayed,
A stran	ger yet	to pain!"	

A poem is rarely found which is absolutely free from all irregularity to its Rhythm, Meter and Rhyme: There are lines in which the rhythm is not entirely uni-

form, or where there is either an excess or lack of syllables—or there may be other irregularities. This does not necessarily indicate, however, that a lack of talent or genius is evinced in the composition of the poem; the vocabulary of the language may be insufficient to meet the demands of perfect versification—and thus advantage must needs be taken of poetical license, which by universal agreement, requires, and is given, the widest possible range.

The following are examples of perfect verse, in each of the four kinds:

"Here rests	his head	upon	the lap	of earth,
A youth	to for	tune and	to fame	unknown;
Fair Sci	ence frowned	not on	his hum	ble birth,
And mel	anchol	y marked	him for	her own."

"Fare thee	weel, thou	first and	fairest!
Fare thee	weel, thou	best and	dearest!
Thine be	ilka	joy and	treasure,
Peace, en	joyment.	love, and	pleasure."

"When I think	of my own	native land,
In a mo	ment I seem	to be there!"

"Make no deep	scrutiny
Into her	mutiny;"

The examples are legion in poetry of the first order in which some of the features belonging to perfect verse are wanting; but the beauty and grandeur of the sentiment amply compensate for all deviation from strict form. The limitations to perfect poetical expression

are so severe that the composition in faultless meter of a worthy poem of ordinary length, is hardly possible of accomplishment; and there is a just limit, too, to the sacrifice of *thought* to *form;* if the rules of rhyme be not violated and there be a proper distribution of accent, the addition or omission now and then of a syllable from an exact metrical arrangement, and even the occasional adoption of certain other forms of poetical license, do not impair the real worth of the poem; these very deviations from a strict standard may, if carefully noted, be utilized both in the impression of the poem on the memory, and its recollection in the future.

Generally speaking, Iambic is the most natural and majestic of the various kinds of Verse, and it contains less technical imperfections than any other form.

Rhythmical Prose is almost invariably written in Iambic, as the works of Shakespeare and other great dramatists amply illustrate—that being the only form which is adapted to the production of such class of literature.

In Iambic Verse it not infrequently happens that the first foot of a line is a Trochee, the accent being reversed, as:

"Errors	like straws	upon the	sur	face flow;
He who	would search	for pearls	must dive	below."

Next to Iambic, Trochaic Verse is perhaps the most commonly employed; it is somewhat more difficult to compose than Iambic, the vocabulary of rhyming words being much less in the former case than in the

latter on account of the difference in accent. In pure Trochaic verse the last foot of each line must usually consist of a dissyllable—while in Iambic it may be composed of either one or two words, and is quite as likely to be one as the other; thus there is a much larger list of rhyming words to select from in the latter case.

In Trochaic Verse, as it is generally written, the last measure of the even lines contains only one syllable, which renders the rhythm more euphonious than if every line ended with a full Trochee. The following illustrates the form of Trochaic Verse most commonly used:

"England's	sun was	slowly	setting
O'er the	hills so	far a	way,
Filling	all the	land with	beauty,
At the	close of	one sad	day."

Sometimes the odd lines end also with a foot containing only one syllable, which is called "Single-rhymed" Trochaic, as:

"One kind	kiss be	fore we	part,
Drop a	tear and	bid a	dieu;
Though we	sever,	my fond	heart
Till we	meet shall	pant for	you."

Among the examples of perfect Trochaic Verse without rhyme, perhaps the most notable is Longfellow's "Hiawatha," an extract from which is here given:

"Thus departed Hiawatha
To the land of the Dacotahs,
To the land of handsome women;
Striding over moor and meadow
Through interminable forests,
Through uninterrupted silence."

Anapestic Verse, while perhaps more difficult to compose than Trochaic, is much less so than Dactylic. In the former case the measures are usually complete, although it is allowable for the first foot of an Anapestic line to be an Iambus, as:

"So sweet | ly she bade | me adieu
I thought | that she bade | me return."

Dactylic Verse is the most difficult of all to compose, and comparatively few poems are written in that form. As in Trochaic Verse, there is usually but one syllable in the last foot of even lines, as:

"One more un | fortunate
Weary of | breath,
Rashly im | portunate,
Gone to her | death."

In both Anapestic and Dactylic Verse the opportunity and necessity of introducing variations to a strict rhythmical arrangement are very great—hence the extreme rarity of pure verse in either of those forms—and yet so skillfully are these variations often interwoven that the beauty of the poem seems not impaired in the least. In the "Burial of Sir John Moore," which Byron pronounced the "most perfect lyric in the language," and which is written in Anapestic Verse, these variations are most marked, as will be noticed in the last stanza, which is here given:

"Slow | ly and sad | ly we laid | him down,
From the field | of his fame | fresh and go | ry;
We carved | not a line | and we raised | not a stone,
But we left | him—alone | with his glo | ry."

In the following selection from "The Bohemian Girl," the mingling of Iambic and Anapestic Verse will be especially noticed:

"I dreamt | that I dwelt | in mar | ble halls,
With vas | sals and serfs | at my side; |
And of all | who assem | bled within | those walls,
That I | was the hope | and the pride. |
I had rich | es too great | to count, | could boast
Of a high | ances | tral name; |
But I al | so dreamt, | which pleased | me most,
That you loved | me still | the same." |

As a general proposition, the more simple in construction a poem is, the more beautiful and majestic, and the least difficult to recollect. A stanza composed of two lines is the easiest of all to retain in the memory—the facility so to do decreasing with the addition of each couplet.

In Iambic Verse the most universal forms are the Long, Short, and Common Meter, and poems thus constructed are, from their simpicity of form, more easily memorized than those which are modeled upon any other plan: the more simple and regular, the more easily are they impressed on the memory and the more permanently retained therein. Although the foregoing forms of Verse, by reason of their peculiar symmetry of structure, are deservedly considered superior to all others in true poetic worth, yet there are not a few examples of poetic excellence the stanzas of which consist of an odd number of lines.

The following are notable illustrations:

"A Battle Song for Freedom," by Gail Hamilton (Abigail Dodge), the first stanza of which is as follows:

"Men of action, men of might,
Stern defenders of the right,
Are you girded for the fight?"

A poem similar in form to the above, is "The Worth of Hours," by Lord Houghton, a selection from which is here given:

"Believe not that your inner eye
Can ever in just measure try
The worth of Hours as they go by;
For every man's weak self, alas!
Makes him to see them, while they pass,
As through a dim or tinted glass."

Another poem constructed of three line stanzas is "A Lay of Real Life," a humorous poem by Thomas Hood: the first, last, and a couple of intermediate stanzas are here given:

"Who ruined me ere I was born,
Sold every acre, grass or corn,
And left the next heir all forlorn?
My grandfather.

Who got in scrapes—an endless score,
But always laid them at *my* door,
Till many a bitter bang I bore?
My cousin.

Who used to share in what was mine,
Or took it all, did he incline,—
'Cause I was *eight* and he was *nine?*
My brother.

Through all this weary world, in brief,
Who ever sympathized with grief,
Or shared my joy—my sole relief?
Myself."

The following are selections from several fine poems, consisting of five-line stanzas—no two possessing identical characteristics.

The first is from "The Old Story," by Florence Percy: (Elizabeth Akers Allen.)

"My heart is chilled, and my pulse is slow,
But often and often will memory go,
Like a blind child lost in a waste of snow,
Back to the days when I loved you so—
The beautiful long ago."

The next selection is from "The Pauper's Death-bed," by Mrs. Southey:

"Tread softly—bow the head—
In reverent silence bow—
No passing bell doth toll—
Yet an immortal soul
Is passing now."

The following selection is from "Take Heart," by Edna Dean Proctor:

"All day the storm and wind has blown
From off the dark and rainy sea;
No bird has past the window flown,
The only song has been the moan
The wind made in the willow-tree."

The next selection is from "Lost," by an anonymous writer:

"There are gains for all our losses,
There are balms for all our pains;
But when youth, the dream, departs,
It takes something from our hearts,
And it never comes again."

The following are examples of seven-line stanzas:

The first is from "The Brides of Enderby," by Jean Ingelow:

"The old mayor climbed the belfry tower,
The ringers rang by two, by three,
'Pull, if ye never pulled before;
Good ringers, pull your best,' quoth he.
'Play uppe, play uppe, O, Boston bells!
Play all your changes, all your swells,
Play uppe, 'The Brides of Enderby.'"

The next example is from Chatterton's "My Love is Dead:"

"O, sing unto my roundelay!
O, drop the briny tear with me!
Dance no more at holiday;
Like a running river be.
My love is dead,
Gone to his death bed,
All under the willow tree."

In "The Cotter's Saturday Night," by Burns, the stanzas are of nine lines each.

The following is the first stanza:

"My loved, my honored, much respected friend!
No mercenary bard his homage pays;
With honest pride I scorn each selfish end;
My dearest need, a friend's esteem and praise:
To you I sing, in simple Scottish lays,
The lowly train in life's sequestered scene;
The native feelings strong, the guileless ways;
What Aiken in a cottage would have been;
Ah! though his worth unknown, far happier there, I ween!"

Here is a selection from another beautiful poem, similarly constructed; it is "The Jolly old Pedagogue," by George Arnold:

"'Twas a jolly old pedagogue, long ago,
Tall and slender, and sallow, and dry;
His form was bent, and his gait was slow,
His long thin hair was as white as snow;
But a wonderful twinkle shone in his eye,
And he sang every night as he went to bed,
'Let us be happy down here below;
The living should live, though the dead be dead,'
Said the jolly old pedagogue, long ago."

The ability to *dissect* a poem cannot but be of incalculable assistance in storing it away in the memory. There cannot be too intimate an acquaintance with the detail of construction of the various parts of a poem, for such knowledge can be used to most excellent advantage, both in the committing to memory of the poem and its subsequent recollection.

Presuming that the student is now sufficiently familiar with the preceding portions of this chapter to take up the memorizing of a poem, the following order of procedure is suggested:

First: Read the poem through carefully, to grasp its *general* meaning.

Second: Note the title and author of the poem.

Third: Note the number of stanzas.

Fourth: Note the number of lines in each stanza.

Fifth: Note the form of verse.

Sixth: Note the meter.

Seventh: Note whether the rhyme is consecutive or alternate.

Eighth: Note whether the poem begins on the right or left-hand page, and on what part thereof, and where it ends; also, which stanza is at the top and bottom of each page, and how many stanzas are on each page.

Ninth: Note the stanzas in which occur phrases or sentences that terminate at other than the end of a line. The following is an example:

"Night is the time to weep;
To wet with unseen tears
Those graves of memory, where sleep
The joys of other years."

Tenth: Note the most important word or words in each line, and especially the first and last accented word.

Eleventh: Note any cases in which two syllables or words are united in one; as

"Howe'er it be, it seems to me
'Tis only noble to be good."

Twelfth: Note any measures in which the accent is reversed, as:

"*Large* was	his boun	ty and	his soul	sincere;
Heaven did	a rec	ompense	as large	ly send."

Thirteenth: Note any cases where, in order that the laws of rhythm may not be violated, the accent is given to the least important word in a measure, as:

"For the	soul is	dead that	slumbers,
And things	*are* not	what they	seem."

or in which the accent is given to the wrong syllable of a word, as:

"And if I find the maiden coy,
I'll murmur forth de*co*rous joy." —Or
"Perishing gloomily,
Spurred by con*tu*mely."

Fourteenth: Note any word at the beginning of a line that is repeated at the beginning of any other line or lines in the poem, as:

"Farewell!" said he, "Minnehaha:
Farewell, O my Laughing Water!
All my heart is buried with you,
All my thoughts go onward with you,
Come not back again to labor,
Come not back again to suffer,
Where the Famine and the Fever
Wear the heart and waste the body,
Soon my task will be completed,
Soon your footsteps I shall follow
To the Islands of the Blessed;
To the Kingdom of Ponemah,
To the land of the Hereafter!"

Fifteenth: Note all cases of Alliteration. Instances frequently occur in which the memory is materially assisted through "apt alliteration's artful aid." Alliteration is often introduced in poetical compositions with charming effect. Shakespeare made frequent use of it, and always with the highest artistic skill, the following being notable instances:

"To-day he puts forth the tender leaves of hope, to-morrow *b*lossoms, and *b*ears his *b*lushing honors thick upon him."

"For I have neither *w*it, nor *w*ords, nor *w*orth."

"The ripest *f*ruit *f*irst *f*alls."

"This precious *s*tone *s*et in the *s*ilver *s*ea."

"Now, I am *c*abined, *c*ribbed, *c*onfined."

"How *s*ilver-*s*weet *s*ound lovers' tongues by night."

In Gray's *Elegy* is the following couplet:

"His *l*istless *l*ength at noontide would he stretch,
And pore upon the *b*rook that *b*abbles *b*y."

In Thomson's *Seasons* occurs this fine alliterative sentence:

"Ships, *d*im-*d*iscovered, *d*ropping from the clouds."

And here is a gem from one of Hartley Coleridge's poems:

"Her very *f*rowns are *f*airer *f*ar
Than smiles of other maidens are."

The following is the first couplet of a familiar song:

"Kathleen Mavourneen, the gray dawn is breaking,
The *h*orn of the *h*unter is *h*eard on the *h*ill."

The following, from Coleridge's *Ancient Mariner* is perhaps the finest specimen of Alliteration in all literature:

"The fair *b*reeze *b*lew, the white *f*oam *f*lew,
The *f*urrow *f*ollowed *f*ree;
We were the f*irst* that ever b*urst*
Into that *s*ilent *s*ea."

Having become familiar with the foregoing suggestions, the student is now presumably ready to begin the actual memorizing of a poem. In entering upon this task the resolution should be formed, to *make haste slowly;* plenty of time should be taken for the memorizing—only small tasks being undertaken at first—and the paramount object should never be lost sight of, which is that the poem shall have a place in the memory not merely transitory, but permanent. With practice the memorizing will grow less difficult, and therefore less slow, but speed should not be sought at the sacrifice of thoroughness; when a task is once begun it should be fully completed before another is commenced; it is better to know one poem well than several imperfectly.

In the memorizing of Verse the student is advised to learn the lines in pairs rather than one line at a time. There are two reasons for so doing. In the first place, a couplet is usually a natural division of the stanza, and thus the meaning is the more easily carried in the mind; and in the second place, the *swing* of the poem is more securely grasped; and if the rhyme be consecutive, each of the rhyming words is more easily

recollected than if only one line is memorized at a time, and a firm retention of the rhyming words is of material assistance in the recollection of what precedes. Each stanza should first be memorized *mentally*, and then repeated *orally*, until it shall have become perfectly familiar.

When a stanza shall have been memorized in this way, the preceding stanza should be repeated in connection with it, and so on through the whole poem. By this time days, and perhaps weeks, will have elapsed since the memorizing of the poem first began, and the latter portion will thus be the freshest in the memory. The student should then try to repeat the first *two* stanzas from memory; if any portion cannot be readily recalled the memory should be refreshed by reference to the book, until both stanzas can be repeated without hesitation. The two next stanzas should then be reviewed in like manner—and so on to the end—the two previous stanzas to be always repeated in connection with the two just rehearsed; then the student should try to recall the first *four* stanzas—and proceed through the whole poem in the same manner as before. By this time it is probable that the poem can be repeated entirely through without hesitation, if it is not too long; should there be any weak spots here and there, they can be easily repaired, and the poem may then be considered as perfectly memorized; it should be reviewed at occasional intervals, that it may become firmly intrenched in the memory. It is of the greatest importance to keep every detail of the poem before

the *visual* memory, that every word, line, and stanza may appear as clearly defined in the *mental* vision as if the eye were gazing on the printed page itself. Thus it is highly essential to note the position of each stanza with reference to the top or bottom of either page; each stanza thus has a *location* in the visual memory, and is therefore more easily recalled.

Some persons, as they memorize each stanza of a poem, repeat all that precedes, but the result of employing such a method is that while the first part of the poem is memorized thoroughly the latter part is memorized less fully than it should be, and thus the time is not employed to the best advantage. The student is especially urged not to fall into this habit; there is no advantage in being more conversant with one part of a poem than another; every part of it should be equally familiar; "the chain is no stronger than its weakest link," and the effort should be to forge a chain that is equally strong throughout

The theory is sometimes advanced that the transcription of a poem will aid its retention in the memory. While the general proposition is true that the act of writing anything down tends to impress it more strongly on the memory, yet this theory applies to the *essence* rather than the *letter*, and to prose rather than to poetry. In the memorizing of a poem there is far more to be gained by cultivating the visual memory than can possibly be done by transcription, and the student is advised not to resort to the latter plan under any circumstances whatever, but to rely entirely

on the methods already indicated, which will suffice for all cases that can arise.

Poetry, besides appealing most powerfully to the sensibilities—to all that is best and greatest in human nature—is often an invaluable aid in the memorizing of names, facts, events, etc., that would be otherwise recollected only with much difficulty.

Every one is familiar with the old rhyme:

"Thirty days hath September," etc., whose usefulness at times most of us can attest. What more convenient and certain a way to determine what date Easter Sunday falls upon than by keeping in mind the following rhyme:

THE DATE FOR EASTER.

"'Thirty days hath September,'—
Every person can remember;
But to know when Easter's come
Puzzles even scholars, some.

When March the twenty-first is past,
Just watch the silvery moon,
And when you see it full and round,
Know Easter'll be here soon.

After the moon has reached its full,
Then Easter will be here
The very Sunday after
In each and every year.

And if it hap on Sunday
The moon should reach its height,
The Sunday following this event
Will be the Easter bright."

How easily can be recalled the various parts of speech and their application by means of the following verses?

"Three little words you often see
Are Articles *a*, *an*, and *the*."

A Noun's the name of anything,
As *school* or *garden*, *hoop*, or *swing*.

Adjectives show the kind of noun,
As *great*, *small*, *pretty*, *white*, or *brown*.

Instead of nouns the pronouns stand,
Her head, *his* face, *your* arm, *my* hand.

Verbs tell us something to be done,
To *read*, *count*, *laugh*, *sing*, *jump*, or *run*.

How things are done, the Adverbs tell,
As *slowly*, *quickly*, *ill*, or *well*.

Conjunctions join the words together,
As men *and* women, wind *or* weather.

The Preposition stands before
A noun, as *in*, or *through*, the door.

The Interjection shows surprise,
As *Oh!* how pretty—*Ah!* how wise.

The whole are called nine parts of speech,
Which reading, writing, spelling, teach.

Can "Shall" and "Will" be defined in terms easier to be retained in the memory than by the following rhyme:

"In the first person simply *Shall* foretells;
In *Will* a threat or else a promise dwells;
Shall in the second and the third doth threat;
Will simply then foretells the future feat."

As a concluding illustration, here is a rhyme for memorizing the keys on a piano-forte:

"All the G and A keys
Are between the black *threes;*
And 'tween the *twos* are all the D's:
Then to the *right* side of the threes
Will be found the B's and C's;
But on the *left* side of the threes
Are all the F's and all the E's."

The foregoing illustrations cannot, it is true, be considered gems of poetic art; they are simply doggerel verse, intended solely to aid the memorizing of facts. There is hardly the opportunity for the introduction of tender sentiment or glowing imagery!

And now we come to the memorizing of Blank Verse, which is more difficult than that of Verse, as it has no Rhyme, but only Rhythm.

Yet, while Blank Verse is indeed lacking in certain qualities which lend a peculiar charm to Verse it has its compensative features in gaining greater latitude of expression in an intellectual sense; loftier flights of fancy can be attained, and thought can be moulded into more majestic diction. It is written mostly in Iambic, which renders possible a grandeur of expression superior to that afforded by any other form of poetical measure.

The method which is suggested for the memorizing of Blank Verse is as follows:

First: Read the poem through with attention, in order to grasp its general meaning, as in the case of Verse.

Second: *N*ote the title and author of the poem.

Third: *N*ote whether the poem begins on the right or left-hand page, and on what part thereof, and where it ends; also, which is the top and bottom line of each page.

Fourth: Note the most important words in each sentence.

Fifth: *N*ote any cases in which two syllables or words are united in one.

It is suggested that the student memorize from one punctuation mark to the next—then from that to the following, and so on until a period is reached; then review whatever is included between that period and the preceding one; after which proceed with the next sentence in like manner, and as each one is committed to memory the previous sentence should be repeated in connection therewith, and so on until some natural division in the composition is reached; then the student should return to the beginning and repeat *two* sentences at a time, following the same plan as in the memorizing of Verse. While this form of poetry will be committed to memory more slowly than in the case of Verse, yet many of the most sublime conceptions which ever emanated from the human mind are found in Blank Verse, and if selections be memorized as opportunities occur from grand creations such as those of Shakespeare, Milton, or *G*oethe, the student will be abundantly satisfied that the time thus spent has been occupied in the most profitable manner that could well be conceived.

Much the same plan should be followed in the memorizing of Prose, as of Blank Verse, and while there is usually in Prose an absence of those qualities which constitute the chief charm of Verse, yet in the measureless realm of literature many noble examples of prose may be found that are well worth committing to memory.

To the student who has not cultivated a habit of "verbal" memorizing it may seem not an easy matter to find the required time for such study, but there are many odd moments of everyday life which would otherwise be spent in idle rumination, that could well be employed in memorizing choice selections from the bounteous stores of thought and sentiment left as the legacy of genius for man's education and exaltation; in garnering in the memory beautiful gems of literature to comfort and delight the mind and heart throughout the coming years.

Every now and then all the poetical and other productions that have been learned should be carefully reviewed, that nothing may be lost, for it is as necessary to have at ready command that which has already been stored in the memory, as to make new acquisitions. It is also an excellent plan, and will afford much satisfaction, to keep a list of such compositions as have at various periods been committed to memory, adding to the list from time to time as new acquisitions are made, which list can be glanced at now and then, to the end that in reviewing from memory the various poems and other selections none may be inadvertently

neglected or omitted, but all preserved in the remembrance with equal thoroughness and permanence. It is a good plan, just before retiring at night, to review whatever may have been memorized during the day, and to repeat the same on rising the next morning; it will often be found that what was but imperfectly impressed on the memory at night will be easily recalled the next morning, after the faculties shall have been refreshed by sleep.

Every one who has a realizing sense of the grand and beautiful in literature is strongly urged to begin at once, if he has not already done so, to cultivate Memory of Diction, and to continue the exercise throughout life. At first progress may seem slow, but with practice the facility to memorize will expand in a degree which at first would have seemed incredible; with growing familiarity with the inspiring thoughts which the touch of genius has moulded into expression, he will find that their true appreciation and the desire to attain added intimacy with the best and greatest in literature, as well as the ability to retain it in the memory in its exact diction, will increase with each act of memorizing; and when the memory shall have become abundantly stored with examples of graceful sentiment, majestic thought, and glowing imagery, from the mind and heart of genius, the student can felicitate himself that he possesses a fund of riches which is destined to be a source of untold satisfaction and inspiration throughout life, and cannot fail to recompense him an hundredfold for the time and effort devoted to its accumulation.

CHAPTER XVI.

PROPER NAMES.

"The memory of names is a subject with which most persons must have a more than passing interest. * * *

"The number of persons who never or rarely forget a name is exceedingly small; the number of those who have a poor memory for them is very large. The reason for this is partly a defect of mental development and partly a matter of habit. In either case it may be overcome by effort. * * *

"I have satisfied myself by experience and observation that a memory for names may be increased not only two, but a hundred-fold."

PROF. HOLBROOK.

That names are far more difficult to recollect than faces, is a fact which is amply verified by the experience of universal mankind. Who indeed is not able to recall with far more readiness a person's features than his name? A single attentive glance at the former is often sufficient to insure their recognition the next time they are seen, however long may be the intervening period—but how different with the name: how brief indeed is likely to be *its* duration in the memory! Unless there be some prompt association, sufficient to bind

the face and name together, in the consciousness, there is little doubt that ere long the name will either have entirely vanished from the memory or be possible of recall only by the most persistent effort of the will.

We will surely all agree that there is little satisfaction in being recognized and greeted by name by an acquaintance, and yet be unable to respond further than in the first particular. In many cases we may recollect the name directly afterwards—but then it is too late—our memory has proved recreant to its trust, and we are thereat annoyed, if not mortified; it is only necessary to recall incidents in our own experience in which *we* were not recognized by name when in our opinion we ought to have been, to appreciate another's feelings when the conditions are reversed.

What an irresistible charm there is in being promptly recognized in both feature and name by those whom we have only casually met! and even if vanity be the medium through which the charm is wrought, yet the sentiment thus inspired is confessedly instinctive in mankind the whole world over; no less so is it to-day than when Young, nearly two centuries ago, said:

"The love of praise, howe'er concealed by art,
Reigns more or less and glows in every heart."

And although simply to be recognized and called by name can hardly be said to constitute praise, yet it at least suggests a feeling of interest, if not regard, which is more or less flattering to the vanity of the recipient

—and if there be a charm in being readily remembered on brief acquaintance, there is a more than corresponding pleasure to the one who remembers—and he who has sedulously cultivated the power to recall both by countenance and cognomen those whom he has met, no matter when or where, or how frequently, need have no fear of ever regretting it; he will not only derive untold pleasure through the exercise of this faculty, but will find the pathway of life far less rugged than it would otherwise be; and his ambitions, whether they be modest or lofty, will be more likely of realization than if the culture of this branch of his memory were neglected.

That the ability to promptly call by name any person whose face has been seen and name heard is a highly desirable faculty to possess, is universally recognized and abundantly confirmed by the experiences of life; it means to the business man increased patronage; it means to him who is in public life added honors and emoluments; and to the man in social life it means an enhanced popularity, whose true value cannot be measured in the currency of mere words.

But it is not only in the personal intercourse of social, business and public life that material advantage is derived from cultivating the memory of proper names; if the literary student would carry "within the book and volume" of his brain the legends of Mythology, the facts of History, or the tangled threads of Fiction, a good memory for names is indispensable. Of how little real value would be one's familiarity with

Mythology if the names of its deities should perchance have eluded his memory: How vast a void in Grecian mythology would there seem if such names as Jupiter and Juno and Pluto and Mars and Apollo were forever blotted from the recollection: What significance would there seem to Egyptian mythology were Osiris and Isis and Seth and Horus and Thoth to be expunged from Memory's tablet: And what a hiatus in one's knowledge of History if the names of the warriors and statesmen whose inspiring deeds are written on the scroll of Fame are found to have faded from the recollection!

And the familiar characters of Fiction: how suggestive of the imagined scenes in which they participated are their very names! To preserve in memory the details of that masterpiece of Hugo's *Les Miserables*, how indispensable are such names as Jean Valjean, and Gavroche, and Marius, and Cosette! To one who has read that greatest of Fielding's works, "Tom Jones," the recollection of the very names of the benevolent Squire Allworthy, the lovely Sophia Western, her jolly father the Squire, and the hero of the story, Tom Jones—surely serve to revive in the memory a world of incident. And in the works of the immortal Dickens how suggestive are such names as Uriah Heep, Silas Wegg, Sam Weller, Dick Swiveler, Captain Cuttle, Alfred Jingle, Micawber, Fagin, Quilp, Squeers, Nan Sykes, Little Nell—and that grandest character of all, Sydney Carton!

From the earliest times men have lived who possessed a phenomenal memory for proper names. Aris-

totle is reputed to have been familiar with all the names in Natural History known in his day. Socrates is said to have remembered the names as well as faces of all who attended his discourses; and Xenophon could call by name every one of the soldiers who were with him during the famous Retreat of the Ten Thousand.

Pericles, the greatest of all Athenian rulers, could greet every citizen of Athens by name, and much of his wonderful popularity was due to that fact. Trajan, it is said, knew by name all the Prætorian Guards—about 10,000 in number.

Cineas, the noted consul, who was sent to Rome on an important mission by Pyrrhus, King of Epirus, performed the feat of memorizing in one day the names of all the men of importance in the city. Themistocles, the victor of Salamis, could call by name every one of the twenty thousand citizens of Athens; and it is related by Plutarch that Lucius Scipio knew the name of every Roman citizen.

Coming down to modern times, we learn that Washington could always call by name a man who had once been introduced to him. Napoleon, it is said, never forgot a face or a name. He would often greet private soldiers by name, sometimes alluding to the circumstances under which he had last met them. John Wesley, when addressed by any person whom he had met before, was rarely at fault in promptly calling him by name. Henry Clay could call by name thousands of his constituents—which was the great secret of his remarkable popularity; James G. Blaine also possessed

this power in a wonderful degree and seldom forgot the name of a person whom he had once met. It is safe to say, however, that with the exception of those whose peculiar vocation necessitates their culture of the faculty, there is not one person in a hundred who has a good memory for proper names, however excellent may be his memory for faces.

But why is it that we can more easily recognize a person's features than recall his name? and why is it more difficult to retain in the memory a proper noun than a common noun? The answer to the first question is that Sight impressions, being in their nature far more vivid and enduring than are those of Sound, produce the more powerful and lasting effect on us of the two; what we *see* affects us more deeply and permanently than what we *hear*.

The other question may be answered by the statement that a proper noun, or name, when considered independently of accidental features of coincidence with something that is familiar, *doesn't mean anything;* for this reason a mental picture of it is not easily formed, which accounts for the fact that the primitive, tedious way of rote, or repetition, is that ordinarily employed to impress a proper noun on the memory, while a common noun, being represented by some object having shape, or appearance, in the physical or mental perception, can thus be *seen*, or *imagined:* in other words a *mental image* of it can be formed and the *name* identified afterwards, through associating it with this mental image.

The ease or the difficulty which we experience in recollecting names seems not to be governed by their length nor peculiarity of spelling or pronunciation, nor by the frequency with which we have read, heard, or uttered them; a name which one person finds most difficult to recall, another may find comparatively easy. Then, too, it is often more difficult for us to recall a person's name at one time than at another, by reason of the different condition of our mind at each time. On one occasion our mind may be so favorably disposed that on sight of the person his name springs to our lips without our scarce knowing it, while at another time some other subject may so engross our thoughts that we cannot divert them therefrom sufficiently to recall the name, in spite of our best endeavor. A proper name which is not familiar through frequent repetition is of very uncertain vitality in the memory at the best, unless we can discern and employ some form of association to preserve it.

It is worth while to note the origin of many of our familiar proper names. Thus White, Black, Brown, Gray, etc., represent colors; King, Prince, Lord, Knight, Pope, Bishop, etc., titles of distinction; vocations are indicated by such names as Miller, Baker, Cook, Smith, Carpenter, Mason, Cooper, Sawyer, Weaver, Hunter, Fisher, Fowler, Miner, Turner, Porter, Carver, Taylor, Barber, Tanner, Draper, Brewer, Shepherd, Waterman, Sadler, Carter, Wagner, Gardner, etc.; personal qualities or characteristics are suggested by such names as Strong, Hardy, Noble, Bright, Gay, Savage, Swift,

Long, Doolittle, etc.; the animal kingdom is represented by such names as Fox, Hare, Wolfe, Lyon, Hart, Buck, Bird, Finch, Partridge, Drake, Heron, Crane, etc.; botanical terms by Wood, Root, Branch, Weed, Reed, Bush, Flower, Rose, Birch, Pine, etc.; and certain features of the earth's surface by Hill, Dale, Field, Marsh, Lane, Brooks, etc.—and many other examples of a similar character might also be given.

We will now pass on to the more important subject of the practical memorizing of proper names, and how to accomplish the same with the least labor and in the most intelligent manner consistent with permanent results. As the names of many places are derived from persons, it will hardly be necessary in the pages which are to follow to distinguish between them; therefore for the sake of convenience all rules, suggestions and illustrations will have reference to the latter, the method which is proposed including all that is requisite to assist the student in the memorizing of geographical names. It is well to fully apprehend that of all classes of words which it may be found necessary or desirable to memorize, a proper name is by far the most difficult, and therefore even the best system which it is possible to devise cannot change a rough path into a smooth one; the most that it can accomplish in such case is to reduce the difficulties to a minimum—the rest must be done through concentration of attention, and repetition.

Names which are possible of ready association will first be considered. They may be associated in the following ways:

First: With identical names belonging to persons who are well known, either in person or by reputation.

Second: With words similarly spelled or pronounced, which have a well known signification.

Third: With words the first portion of which, only, is similarly spelled or pronounced, and which has a well known meaning.

Fourth: With significant words having a pronunciation of general similarity, but not identical.

For convenience the second and third classes of names may be subdivided into the following parts of speech:

1: Common nouns.
2: Adjectives.
3: Verbs and adverbs.

Perhaps no better illustration can be given of the remarkable extent to which this form of association can be used, than to select from among the familiar names of history such ones as can be readily associated by the foregoing method. In conformity with this proposition, lists of historical personages as above indicated have been selected and are here given. It will be remembered that the words with which the proper names or their first syllables are to be associated need not be identical in *both* spelling and pronunciation, but only in one or the other; thus Bede would be associated with *Bead:* Hale with *Hail;* Harte with *Heart:* Kane with *Cane:* the first syllable of Burdett would be associated with *Bird:* that of Bancroft with *Bank:* of Coleridge with *Coal:* of Egbert with *Egg:* Ledyard

with *Lead*, and Wycliffe with *Wick*: *Camel* would suggest Camillus: *Palace*, Palissy, and so on. In the case, however, of a word consisting of two or more syllables, each one of which, if taken separately, would constitute an intelligible word, care should be taken to memorize the syllables in their proper order, otherwise an experience might sometimes be met with as interesting as the following: A young lady received a social call from a gentleman named Cowdry, whom, in the course of the evening, she introduced to her mother, who was unfortunately sadly deficient in the memory of proper names. After her visitor had departed the young lady began to drill her mother in the memorizing of his name, using the syllables separately, as each of them represented a distinct word, and was thus the more easily memorized. In due time the mother expressed herself as being positive that she would not forget the name, and when the next call was made by the gentleman the mother advanced with a smile as he entered the room and said in the most confident manner: "How do you do, Mr. *Dry Cow!*"

The lists of historical personages are as follows.

COMMON NOUNS.

*Acid*alius
Alabaster
Angelo
Antony
Archimedes
Arkwright
Arminius
Ashburton

Baber
Bacon
Bagration
Baker
Bales
Bancroft
Barbarossa
Barneveldt
Baronius
Barri
Barrow
Bellini
Benedict
Bierstadt
Bonnet
Boone
Booth
Bossuet
Bowles
Bowring
Boyle
Brasidas
Bayard
Beaconsfield
Beaumont
Bede
Beecher
Beethoven
Buckle
Bulwer
Burdett
Burr
Burton
Butler

Cabot
Camillus
Campbell
Canning
Capgrave
Cardan
Carlyle
Castlereagh
Catullus
Cavalier
Cellini
Chapman
Chartier
Clay
Cobden
Coke
Coleridge
Colonna
Colt
Cook
Cooper
Corday
Corneille
Cousin
Coverdale
Cowper

*Chateau*briand
*Cherub*ini
Church ill

Den ham
Drake

East lake
Edge worth
*Eg*bert
*Elm*acin

*Falcon*er
*Field*ing
Fin lay
*Fir*dousi
Fisch art
Flax man
*Fon*tenelle

Galen
Gardiner
Garrison
Gassendi

Hale
*Hall*er
*Ham*ilton
Harte
Hawthorne
*Hay*dn
*Helm*holtz

Kane

*Crab*be
Cruik shank
Cud worth

Dyce
Dyer

Elphin stone
*Epic*tetus
*Epicur*us
*Erin*na

Foote
Ford
Forrest
*Fort*esque
*Fortun*atus
*Four*ier
Fox

*Germani*cus
Gill ráy
Glen dower
Goldsmith

*Herd*er
Hogg
*Home*r
Hood
Hook
Hunter
Hut ton

Key

Kant
Ken

Kingsley
Kneller

Lamb
Land seer
Lap lace
Lardner
Lassen
Law
Led yard
Legendre
Lemonnier

Leopardi
Lever
Lilye
Lipsius
Liver pool
Locke
Lover
Lucretius
Lully

Macau lay
Male branche
Mansfield
Martyr
Matsys

Men age
Methodius
Middle ton
Millet
Monk

Napoleon
Necker

Nestor
North cote

Odoric

Origen

Paganini
Paine
Palissy
Palmerston
Park
Part on
Patti

Penn

Pitt
Plato
Polo
Pompey
Pope
Porter
Powers

Prescott

*Pest*alozzi
*Pin*dar

*Quarl*es

*Raven*na
Robespierre

Salad in
Sandean
Savage
Schilling
Shaftesbury
Shelley
Smiles

Turner

*Vieux*temps

Wall ace
War wick
Web ster
Wedg wood
Wellington

*Priest*ly
*Puff*endorf

Quintilian

Rooke
Rymer

Socrates
Sodoma
Son tag
Southey
Spartacus
Steele
Story

Tyn dale

Villani

West
Wolfe
Wordsworth
Wren
Wycliffe

ADJECTIVES.

Better ton
Black stone

Constantine

Fair fax

Bright
Browning

Cruden

Ful ton

Gay
Glad stone

Gray
Grimm

Hard wicke

Hot man

Little ton

Long fellow

Martialis
Moody

Moore
Motley

Paley
Pius

Prior
Proudhon

Richelieu

Robusti

Sterne

Swift

Tauler

Tacit us

White field

Young

VERBS AND ADVERBS.

Add i son

Anglesey

Beat on
Boling broke

Borrow
Burns

Chantrey
Charron

Chat ham
Chatter ton

Flo tow

Foster

Grant

Gringoire

Hastings
Helps

Hum boldt
Hunt

Liszt	*Living stone*
Marry att	*Marvell*
Parry	*Reynolds*
Reade	*Peel*
Sever us	*Stowe*
Shake speare	*Spinola*
Speke	*Sue*
Tooke	*Tanna hill*
Waitz	*Washing ton*

Among the names in the fourth class, to be associated with significant words of similar sound, may be mentioned the following:

Akenside	(Aching side)
Ballou	(Balloon)
Barbour	(Barber)
Becket	(Bucket)
Brougham	(Broom)
Buffon	(Buffoon)
Bunyan	(Bunion)
Calderon	(Cauldron)
Childeric	(Children)
Chaucer	(Saucer)
Confucius	(Confusion)
Curran	(Currant)
Cushing	(Cushion)

Daguerre	(Dagger)
Dampier	(Damp air)
Dominic (St.)	(Domino)
Ernst	(Earnest)
Fawkes	(Folks)
Forster	(Forester)
Garrick	(Garret)
Gough	(Cough)
Handel	(Handle)
Hannibal	(Hand-bell)
Herrick	(Herring)
Lecky	(Lucky)
Libanius	(Libation)
Livy	(Livid)
Lowell	(Low well)
Loyola	(Loyalty)
Massinger	(Messenger)
Mather	(Mother)
Mazarin	(Magazine)
Medici	(Medicine)
Mencius	(Mention)
Molière	(Molar)
Montaigne	(Mountain)
Morland	(More land)
Offenbach	(Off and back)
Palladis	(Paradise)

Pasteur	(Pasture)
Pepys	(Pepsin)
Petrarch	(Patriarch)
Philopœmen	(Philopoena)
Plutarch	(Plutocrat)
Politian	(Politician)
Prentice	(Apprentice)
Propertius	(Property)
Reaumur	(Roamer)
Rossetti	(Rosette)
Sappho	(Sapphire)
Scarlatti	(Scarlet tie)
Silliman	(Silly man)
Skelton	(Skeleton)
Sothern	(Southern)
Spurgeon	(Sturgeon)
Stedman	(Steady man)
Stilicho	(Stiletto)
Sulla	(Sully)
Sumner	(Summer)
Tennyson	(Tennis)
Tromp	(Tramp)
Valla	(Valley)
Virgil	(Virgin)
Wagner	(Wagoner)
Wessel	(Vessel)
Whittier	(Wittier)
Zeno	(Zero)

It will thus be seen from the foregoing lists that hundreds of the distinguished men of history possess names which are comparatively easy of association.

Some of the above illustrations may seem far-fetched, but it must be borne in mind that, by reason of proper names being the most difficult of all to memorize, any association whatever, absurd though it may appear, is far better than none, and thus the most liberal latitude may properly be used in the forming of associations.

And now as to the actual practice of memorizing proper names.

The first thing is to ascertain if the name to be memorized is identical with that of any other person with whom the student is on familiar terms. If it is, the two should be associated in the mind until the recollection of the more familiar name of the two will cause the other name to be revived in the memory also; this will be found the easiest way of all in which to memorize a proper name; if the student be unable to recall to mind a name identical in spelling or pronunciation with the one which it is desired to memorize, let him try to think of a familiar name whose *first syllable* corresponds with that of the name to be memorized; if this can be done it will be found that the whole name can be recalled with only a slight effort of the memory, the first syllable being really the key. Should no name be thought of which can be thus associated, let the student next see if the name to be memorized is spelled or pronounced the same as some well known word or

words with a *meaning;* if the whole name has no such counterpart let it be ascertained if the *first syllable* has, and if so what part of speech it represents; the balance of the name will be recalled with but slight effort, as in the case just mentioned—the first syllable being of all-importance; or let the student endeavor to think of some familiar word that sounds *nearly* the same as the name to be memorized—as Gough (Cough): Spurgeon (Sturgeon): Molière (Molar): Confucius (Confusion).

If all these attempts to find an associating syllable or word prove fruitless, there is no other way but to fix the name in the memory by purely Sight or Sound impressions, or both—in other words, by frequently repeating the name until it is fairly *pounded* into the memory; and where this last plan is resorted to, experience will demonstrate that the practice already had of searching for a word or syllable of similar spelling or sound will in itself prove of great assistance in imprinting the name on the memory. Although the last-mentioned means of memorizing proper names is seemingly primitive in its character and devoid of system, yet even in that case method can be employed to a considerable extent; for instance, the student can notice how many syllables are in a name and how many letters in the first syllable; whether the first letter is a vowel or a consonant; whether the second letter is of the same character, or its opposite—and so on.

A student of a mathematical turn of mind can evolve method out of that which would ordinarily seem not to furnish the slightest foundation therefor. Sup-

pose the alphabet be divided into five parts, the vowels forming the points of division, it will be noticed that between *a* and *e* there are three consonants; between *e* and *i* the same number; between *i* and *o* there are five; between *o* and *u*, five; and after *u*, five also—the vowels also numbering five: so that the number of vowels, the number of divisions, and the number of consonants in each division are represented by the figures 3 and 5, which are both odd. Let it then be noted whether the name to be memorized begins with a vowel or a consonant (the chances being about five to one that it will be the latter), and whether the second letter is of the same character, or its opposite. If the name begins with a vowel the student will find less difficulty in recollecting which one it is, as there are only five vowels, and comparatively few names begin with either I or U, the proportion of proper names beginning with the various vowels being about as follows: A 20, E 15, I 3, O 8, U 2—so that nine times out of ten a name beginning with a vowel will not commence with either I or U, and when it does the very exception will tend to impress the memory; the vowel can also be designated numerically—1, 2, 3, 4, and 5 indicating *a*, *e*, *i*, *o*, and *u*, respectively. If the name begins with a consonant there will be little difficulty in recalling the particular division in which the consonant is situated—whether the 1st, 2d, 3d, 4th or 5th—also the number of the letter in such division; if the second letter in the name be a consonant also, it can be located by the same method. With the vowels there will be less difficulty;

the most important thing is to learn the consonants—the vowels will be comparatively easy to recollect. It will seldom be necessary to memorize more than the first syllable of a name—the rest will usually be retained in the memory almost unconsciously; and should the first syllable consist of more than three letters it will rarely be necessary to memorize more than the first three. The *first letter* of a name is the most essential of all to recollect, each succeeding letter being usually less difficult to recall than the preceding one; therefore especial care should be taken to thoroughly imprint the first letter on the memory, as it is the key to that which follows. After a name has been memorized in this way and afterwards reproduced two or three times, it is likely to be retained permanently in the memory through Sight impressions alone, when it will no longer be necessary to rely upon anything else; the main idea in memorizing a name is to force the mind to dwell intently on the most important letters until a thorough impression is effected. Names which are memorized by this method are more than likely to cling to the memory with great tenacity.

For example: Take the name "Atherton." A, being the first letter in the alphabet, would be represented by 1. T is in the fourth division and is the fifth letter. H is in the second division and is the third letter. The figures 1; 4, 5; 2, 3 would therefore represent the first syllable of the name, *Ath.*, a single figure indicating a vowel, and a pair of figures a consonant. The name *Bascome* would be indicated thus: 1, 1; 1; 4, 4

for the first syllable; and 4, 4; 4, 5; 2 would represent the first syllable of the name *Stevens*. It will be noticed that in each of the above cases the vowel occupies a different position. It may be urged that it ought to be less difficult to memorize the letters themselves than the figures, as the former contain the lesser number of characters, but one who is of a mathematical cast of mind might reply that the *relation between figures*, the highest of which does not exceed the numeral 5, is retained in the memory with less difficulty than a particular combination of letters selected from among 26!

For a person who is defective in "figure memory" the following plan may be more practical: Write the name down on a slip of paper or in a book, and look at it attentively now and then, as well as pronounce it audibly, and perhaps rewrite it one or more times, as each act of writing tends to impress the name still more strongly on the memory. Louis Napoleon, who had a remarkable memory for names, used to write on a slip of paper a person's name that he wished to retain, look at the slip carefully and then throw it away; it is said that he never forgot a name memorized in this way.

After a person's name has been memorized, by whatever method, it can be still further intrenched in the memory in two ways:

First: by linking together in the mind the person's name and the place where he was met, and the circumstances surrounding the meeting.

Second: by linking together the person's name and any striking peculiarities of his appearance or dress.

One of the severest tests to which a person's memory of proper names can be subjected is when he is introduced to a number of persons in quick succession, as at a social gathering. The closest attention must be paid as each name is uttered, and the association must be prompt, or it will be of little value; in most cases it must be with some peculiarity of feature, form, or dress, the association being adopted which seems the most applicable, and an early opportunity sought to impress it still more strongly on the mind; for in each case sufficient time must be taken to form a clearly-defined association. The names should be written down in as many cases as possible, that the memory impressions may be preserved before any of the essential ones have fled. Opportunities to write down names do not occur in every case however, and where they do not, reliance must be placed on the means previously indicated, which will usually suffice.

Thus far the methods suggested have had reference to surnames only—they being of chief importance. It is often necessary or desirable to memorize a person's initials also. To accomplish this the student should, if possible, first recall to memory some well known person having initials identical with the former person's, and then mentally associate the two persons, the recollection of either one aiding to recall the other. It usually happens that some name can be thought of with identical initials, but if both initials in their proper order cannot be found accompanying any name thus thought of, then the initials should be reversed and a

name sought for to correspond therewith, and if a name is found, a mental note should be made of the fact that the initials are reversed; but if a name cannot be found in either case, then the same method should be employed as in memorizing the first portion of a surname which cannot be twisted into a meaning.

Another way to memorize initials is to see if they correspond with any well known abbreviations, as for instance: B. C., A. D., A. M., P. M., N. E., N. W., S. E., S. W., M. C., M. P., D. D., M. D., B. A., M. A., U. S., P. O., N. B., O. K., etc. Besides the surname and the initials, it is sometimes necessary or desirable to memorize a person's *given* name, which latter may not be identical with that of the person whose initials may correspond. The cases however when it would be necessary to memorize that portion of the name at the same time as the rest of the name are extremely rare, as it must be a familiar acquaintance indeed whom one would greet or mention by other than his or her surname. The cases in which given names are used are mostly where relatives or personal friends are addressed, or else where children are spoken to, and he who would be popular with the little ones would do well to cultivate a memory for given names. Children love to be noticed and called by name; it is regarded by them as a compliment to their intelligence and consequence which they are only too ready to appreciate; and the failure of a person whom a child knows, to promptly call it by its given name is not soon forgotten.

Some years ago a clergyman was called to the pas-

torate of a church, and a few months after he had entered upon his duties one of the little girls in the congregation was asked how she liked the new minister. "Oh! I don't like him very well," was the reply. "And why not?" "Oh! because he never knows my name!" An important feature of that minister's education had evidently been neglected; yet there is no good reason why he should not have produced a very different impression on the child, as the memorizing of given names is quite easy compared with that of surnames, the number of the former in common use being limited—not exceeding a hundred in the case of men and seventy-five in that of women—while in surnames the variety is unlimited.

Given names which are in common use need not be memorized by any special method; the very frequency with which they are uttered will sufficiently impress them on the memory without mnemonical aid; the main idea to bear in mind is that the name must in some way be associated with the person to whom it belongs. The most simple and practical plan is to think of some well known person whose given name is the same as that which is to be memorized, and then associate the two; if such a person cannot be thought of, then the name must be memorized simply by frequent repetition—the necessity for which is, however, not likely to often occur.

Among proper names those pertaining to geography will be generally found the most difficult to memorize, owing to the fact that they contain less possibilities of

comparison than surnames. It is indeed true that many geographical localities are either named after or derived from surnames, but a large proportion of such names are foreign and not modern, and do not correspond with surnames of the present day; besides, it is not so easy for the mind to associate a person with a place as with another person; it is more natural to associate like with like. The memorizing of geographical names should be accomplished, in the main, in the same manner as that of surnames, the suggestions which are applicable in the one case being equally so in the other.

To these suggestions which have been offered but little need be added; attention and practice on the part of the student must do the rest. With practice will come the capacity to seize intuitively upon the most available form of association and fix a name in the memory with promptness and permanency; and the possessor of a well-developed memory for proper names may well hope and expect to acquire through the years of his life an extended circle of friends, and to attain an enviable familiarity with the chief names that adorn the pages of history and legend and fiction. And with a prospect such as this to stimulate his energies, who shall say that the time and labor devoted to the cultivation of a memory for proper names could well be spent in vain?

CHAPTER XVII.

MUSIC.

"The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems and spoils."

SHAKESPEARE.

"Who is there that, in logical words, can express the effect music has on us? A kind of inarticulate, unfathomable speech, which leads us to the edge of the infinite, and lets us for moments gaze into that! * * * Music is well said to be the speech of angels."

CARLYLE.

"Of all the liberal arts, music has the greatest influence over the passions. * * * A well composed song strikes and softens the mind and produces a greater effect than a moral work, which convinces our reason, but does not warm our feelings, nor effect the slightest alteration in our habits."

NAPOLEON.

"Music wakes a glad remembrance of our youth, calls back past joys, and warms us into transport."

ROWE.

"Music, which gentler on the spirit lies
Than tired eyelids upon tired eyes."

TENNYSON.

"And the night shall be filled with music,
And the cares that infest the day
Shall fold their tents, like the Arabs,
And as silently steal away."

LONGFELLOW.

Of all the pure delights which it is possible for the human soul to absorb through the medium of the sensibilities, Music can furnish the sweetest, the most inspiring, and the most enduring. How often have incidents which seemed to elude all other attempts at recollection, been revived in the memory through the echo of some tender strain last heard, it may be, in the halcyon days of childhood! Often have stony hearts been softened, often have noble deeds been inspired through the pathos, the eloquence and the majesty of Music. It has the power to portray every possible emotion of the human soul; in this realm it holds undisputed sway, and in this realm alone can its power be exerted. A noted writer, in an essay on music, says: "Prose is the language of social life; Poetry that of fancy and imagination; Painting and Architecture of color and form; and Music of emotion."

To define music in as few words as possible, no more concise statement can perhaps be made than that it is a succession or combination of euphonious sounds arranged in conformity with the laws of harmony. This is simply the formal definition of the term—but surely mere words are inadequate to express the full significance of that one word—Music! From the distant twilight of Time through all the intervening ages have the magic strains of music proved their wondrous potency to sway the hearts and minds of men; its gentle cadences may move the heart to tender sentiment, or lull the senses into sweet oblivion; its measures of majestic harmonies can stir to their inmost recesses the

mighty passions of the soul. The surpassing eloquence of a Chatham, a Webster, or a Mirabeau may indeed fill the soul with patriotic impulse, but the thrilling accents of "Hail Columbia," the "*Marseillaise*," or "*Wacht am Rhein*," can rouse men to intrepid action. Its mission is for good, not evil; it harmonizes with the better impulses of human nature; it cannot exert a malignant nor debasing influence, but sheds luster on the noble efforts and heroic acts of man.

Coleridge said of music: "I feel physically refreshed and strengthened by music, as Milton says *he* did."

Thomas Moore said: "Music is the true interpreter of the religions." And Charles Kingsley expressed this sentiment: "Music is necessary to the rounding and finishing of the perfect character."

While Music may be not improperly termed one of the exact sciences, yet its illustrative features occupy a field whose vastness is inconceivable. The world of Music is a treasure-world, but its treasures are not measurable by earthly standards; it is a world so vast that neither head nor heart has ever fathomed its profoundest depths nor soared to its sublimest heights. New Beethovens, and Wagners, and Mozarts will rise, flourish, and pass away; others will take their places, and in turn live and labor and leave to generations yet to come the imperishable fruits of their genius—and so it will continue through the ages, even to the end of time—and beyond, and yet beyond, exhaustless treasures still will be, in wondrous Music-land!

Most memory-systems which have hitherto appeared have either been silent regarding the subject of musical-memory, or else have disposed of it in comparatively few words; they have either considered the subject of memory-culture in a too general way, or, while claiming to cover the whole subject, have really treated only certain branches of it, Music not being among the number—possibly for the reason that the culture of musical-memory was deemed of too little importance to require special mention. The fact is, however, that in musical-culture the demands upon the attention and the recollection are often very great; accurate sight-reading and skillful execution require as close a concentration of attention as almost any other kind of task imposed upon the human mind; in orchestral work and in accompanying on the piano or organ, the demands upon the attention are often very great, and to thoroughly memorize a classical musical composition requires uncommon patience and perseverance. The conductor of a symphonic concert or of a grand opera or oratorio needs to be not only a thorough musician and to keep his senses alert during the whole performance, watching every detail with scrupulous care, but he must also be familiar with the composition. A Thomas, a Nikisch, or a Damrosch deserves the homage due the possessor of talent or genius no less than does an accomplished orator or a famed writer; the distinction is in kind rather than power.

The ability to retain musical sounds in the memory is largely intuitive; the love of music is inborn, and

within certain limits the "strains of melodious measure" which greet the ear are received and retained spontaneously; but when these limits are passed—when we would advance from mere melody into the vast world of musical science; when we would progress from the passive power of retaining in the memory a simple succession of musical sounds, to the ability to interpret the works of the great masters, reliance on the spontaneous action of uneducated musical memory is certain to prove delusive—for only by diligent and intelligent effort, and by a method very different from that employed in any other branch of memory-culture, can excellence be attained in the memory of music.

History gives us many instances of remarkable powers in the memorizing of music, of which the following may be cited:

Carolan, the greatest of Irish bards, once met a noted musician and challenged him to a test of their respective musical abilities. The *defi* was accepted and Carolan's rival played on his violin one of Vivaldi's most difficult concertos. On the conclusion of the performance, Carolan, who had never heard the piece before, took his harp and played the concerto through from beginning to end without making a single error. His rival thereupon yielded the palm, thoroughly satisfied of Carolan's superiority, as well he might be.

Beethoven could retain in his memory any musical composition, however complex, that he had listened to, and could reproduce most of it. He could play from memory every one of the compositions in Bach's "Well

Tempered Clavichord," there being forty-eight preludes and the same number of fugues, which in intricacy of movement and difficulty of execution are almost unexampled, as each of those compositions is written in the most abstruse style of counterpoint.

Mozart, at four years of age, could remember, note for note, elaborate solos in concertos which he had heard; he could learn a minuet in half-an-hour, and even composed short pieces at that early age. At six he was able to compose without the aid of an instrument, and continued to advance rapidly in musical memory and knowledge. When fourteen years old he went to Rome in Holy Week. At the Sistine Chapel was performed each day Allegri's "Miserèrè," the score of which Mozart wished to obtain, but learned that no copies were allowed to be made. He listened attentively to the performance, at the conclusion of which he wrote the whole score from memory without an error. Another time Mozart was engaged to contribute an original composition to be performed by a noted violinist and himself at Vienna before the Emperor Joseph. On arriving at the appointed place Mozart discovered that he had forgotten to bring his part. Nothing dismayed, he placed a blank sheet of paper before him and played his part through from memory without a mistake. When the opera of "Don Giovanni" was first performed there was no time to copy the score for the harpsichord, but Mozart was equal to the occasion; he conducted the entire opera and played the

harpsichord accompaniment to the songs and choruses without a note before him.

There are many well-attested instances of Mendelssohn's remarkable musical memory. He once gave a grand concert in London at which his Overture to "Midsummer Night's Dream" was produced. There was only one copy of the full score, which was taken charge of by the organist of St. Paul's Cathedral, who unfortunately left it in a hackney coach—whereupon Mendelssohn wrote out another score from memory without an error. At another time, when about to direct a public performance of Bach's "Passion Music," he found on mounting the conductor's platform that instead of the score of the work to be performed, that of another composition had been brought by mistake. Without hesitation Mendelssohn successfully conducted this complicated work of the great contrapuntalist, from memory, automatically turning over leaf after leaf of the score before him as the performance progressed, so that no feeling of uneasiness might enter the minds of the orchestra and singers.

Gottschalk, it is said, could play from memory several thousand compositions, including many of the works of Bach. The noted conductor Vianesi rarely has the score before him in conducting an opera, knowing every note of many operas by memory. It is said that Blind Tom, the negro prodigy, knew several thousand piano compositions by heart; all his faculties seemed concentrated into the sense of hearing; he lived

and moved in the world of sound, but had little or no artistic perception.

While it is true that no one who does not possess true musical instincts can ever hope to attain proficiency in the "Divine Art," it is equally true that, however rich may be one's native musical endowments, yet without the possession of a retentive memory he will never be able to hold his own among artists. The piano or violin soloist who cannot play the most difficult numbers in his repertoire from memory with ease and accuracy, can never hope to ascend above the plane of mediocrity as an artist; however excellent may be his ability as a reader of music and however faultless his *technique*, these are not sufficient—he must play with *expression;* and this cannot be done with fidelity unless the piece is memorized.

Expression is the *aroma* of musical performance; if this be lacking, if there be not a soulful interpretation of the composition, its rendition will not be satisfactory to either performer or audience. True expression cannot be attained without undivided attention; by dint of faithful and intelligent study and practice the technical elements of a composition may be so thoroughly memorized that the attention can be devoted chiefly to expression, which latter feature is the one in which is essentially manifested the superiority of the true artist. There is a vast chasm between the mere melody-lover and the *musician;* one moves only within restricted bounds; the other, master of the art

which he loves, is ever exploring new realms and attaining nobler heights.

As well may we compare the petty politician with a Pitt or a Webster; the flippant rhymester with a Shakespeare or a Milton; or the dime-novel writer with a Dickens or a Scott—as to compare the average person who "likes music" with a trained musician; the former only hovers about the outskirts of a world which offers to the latter an infinite expanse of wonder and delight—a world which might be explored by thousands who, through lack of properly directed effort, may never advance beyond the outer circle of musical understanding.

Among those who can perform on a musical instrument, a vast majority are virtually helpless without their notes; and as a result their playing, however correct it may be in a technical sense, is lacking in the vital essence—*soul;* with the attention divided among several elements there cannot be a faithful interpretation of the composer's conception; thus the rendition of the composition is, in a sense, meaningless; it may express the *letter*, but the *spirit* it cannot; unless the attention be given chiefly to *expression*, a truly artistic performance cannot result. For the adequate rendering of good music it is therefore necessary that it be thoroughly memorized—and to attain this end is worthy the most intelligent and persevering effort.

As the piano is the musical instrument which is in the most general use, the suggestions which are to follow will be directed to the memorizing of piano-music.

We will assume that the student proposes not only

to become proficient technically; in piano playing, but also to be able to perfectly memorize a composition in the easiest way, and ultimately to attain a high degree of perfection as a musician.

To begin with, each advance step in the theory and practice of music should be taken only after the route already traversed shall have become entirely familiar; the rudiments must be fully mastered, every detail being drilled into the memory until it cannot be forgotten—and thus little by little, step by step, will the student advance in musical knowledge.

Thoroughness is the main road that leads to success in any art. Who has not heard the story about Michael Angelo, who was putting the finishing touches to a magnificent painting—when a friend who had been watching the artist putting dainty strokes of the brush here and there, that were scarcely perceptible, said to him: "Why do you spend so much time on your picture? all these little touches are but the merest trifles!" "Ah!" said Angelo: "But trifles make perfection, and perfection is no trifle!"

None of the great virtuosos in music become so except through thoroughness and hard work. Paganini, who wrote music of such technical difficulty that no one could play it but himself, used to practice single passages for ten hours at a time.

The keys of Handel's harpsichord became so worn by practice that they were hollowed like the bowl of a spoon.

Wieniawski, the famous Polish violinist, said that in order to retain his technique he was obliged to practice fully three hours each day, and that if he missed a single day he felt the difference in his power of execution very perceptibly.

To the intelligent student it would seem superfluous to advise that all studies should be pursued under the guidance of a competent teacher, that wrong habits be not allowed to obtain a foot-hold—for Dr. Johnson's words: "The chains of habit are generally too small to be felt till they are too strong to be broken," are as applicable to the practice of music as to anything else, and too much care cannot be exercised in the choice of an instructor.

In memorizing a musical composition the following order of procedure is advised:

First: Memorize the score.

Second: Memorize the technical part.

Third: *Interpret* the composition. A musical score furnishes in itself a great many landmarks, or guide-posts, by means of which the student can impress the various details of the composition on his visual memory. No two lines of a piece of music look exactly alike, and by this contrast in appearance is the student enabled to more easily fix in his visual memory the various features of the composition; and with properly directed study, in a short time the visualizing faculty can be so well cultivated that a score of moderate length can be carried in the visual memory for a con-

siderable period with ease and certainty. The student should observe—

First: The Key.

Second: The Time.

Third: The Movement, or *Tempo*.

Fourth: The Marks of Expression.

Fifth: The position of the Notes.

While the main body of the composition is presumably written in the key indicated by the signature, yet changes of key may occur, which are indicated either by a change of signature in each case, or by the sharping or flatting of such notes as are necessary to accomplish the same purpose. The student should so familiarize himself with the notes representing the keys that he can readily tell what key any part of the composition is in; and he should make a mental record of the places in the score where the changes of key occur; the points where passages are repeated should also be carefully observed, if there be any.

Next should be noted the *time*, and whether the original time is maintained throughout the piece, or, if there are changes of time, what they are and where they occur.

The student should next notice whether the Movement, or *Tempo*, is *Presto* or *Largo*, or any of the intermediate degrees; if there are any changes of movement a mental note should be taken of what they are, and of the places where such changes occur.

The various marks of expression and where they are placed, should next be carefully studied—for by these

signs is the *phrasing* indicated, with all its rich possibilities of variety—which may properly be termed the *architecture* of music. By these means does the composer indicate his *ideas*—signify the *inner meaning* of what he has written, that the performer may understand for himself and interpret to others the composer's own conception of how the composition should be executed to faithfully represent its *motive;* its fidelity of interpretation will depend on the performer's sympathy with the sentiment of the composer—which must be a matter of inner consciousness and cannot be expressed in positive terms any more than can the magnetic effect of a great oration, or the noble strains of a patriotic air played by a grand orchestra; the key, the time and the movement are the *mechanics* of music; expression is its *soul.*

Last of all, and supremely essential from a technical standpoint, the *position of the notes* should be carefully observed. By this is meant, not that the situation of each particular note should be memorized, but that the location of the most important ones should be mentally noted, especially those notes which carry the theme. It is more important to have the first note of a measure impressed on the visual memory than any of the others, as, being the only accented note where there are three or less beats to the measure, and having the primary accent where there is a greater number, it gives at least a hint of the notes which immediately follow. The highest and the lowest notes, and the particular notes which begin and end each page, serve as musical land-

marks of which excellent use can be made; and it is also well to note the difference in the rhythmic structure of various measures.

An association of dynamic signs and marks of expression with contiguous notes is an important means of fixing the position of both in the memory—such as noticing where *piano* and *forte* passages begin and end; where *staccato* or *sostenuto* notes are introduced; at what places *accelerando* and *ritenuto* passages occur, etc.

In memorizing the position of notes on a musical score it is best to study the treble staff first, and the bass last, as the theme or melody is usually carried by the former—familiarity with which will enable the student to more easily memorize the latter, which, while it may be said to constitute the foundation of the structure, yet is subsidiary to the treble; the bass is always written last, never first.

If the foregoing suggestions are faithfully followed for a reasonable time, the student will find that he can accomplish the visual memorizing of a musical score of moderate length with comparatively little effort, and that the practice will be not only profitable, but interesting. He is advised to familiarize himself with the various details in the order indicated, gaining a mastery of each before the next is taken up.

Having memorized the score, the next step is to learn to play the notes with mechanical correctness without looking at the music. Experience has demonstrated that in order to best accomplish this the two

parts should be practiced separately, the proper fingering being first carefully studied for each case, that the technical difficulties may be reduced to a minimum. Except when it is desired to cultivate the faculty of sight-reading, the rapidity of practice should be limited to the ability of the student to play the notes with mechanical correctness, even though at first it may be much slower than the proper *tempo*, which latter is often so rapid as to tax the skill of a practiced player. The speed may be gradually increased as the piece grows familiar, until the player can execute each part separately in *tempo;* then both parts should be practiced together in the same manner, those passages which are the most difficult being played over and over until they can be executed with the same smoothness and certainty as the simpler ones, until all parts are equally familiar.

As practice progresses the student will learn to form easy and natural associations of the various parts with each other and with the score, and in these associations *rhythm* will form an important feature—for rhythm is the very life of every artistic performance, and corresponds to inflection in reading or speaking; every now and then syncopated passages are likely to occur, which may be compared to quotations, whose very infrequency tends to impress them on the memory with especial significance.

In the preliminary stages of technical study, an excellent way to impress the sounds of the various notes on the memory, as well as hasten the acquirement of

technical perfection, is to emphasize the rhythm by exaggerating the accent. When such object shall have been attained the excess of accent may be dispensed with, and practice continued on the lines of a faithful rendering of the piece, from a mechanical standpoint.

But after all, technique, essential as it is, serves as but a means to an end—the *interpretation;* without that the composition cannot be intelligently performed; technique is an invaluable servant but a very undesirable master—therefore its attainment ought not to be sought at the expense of that culture which transcends all technical acquisition—the power of expression.

Having now progressed so far as to be able to play the notes with technical correctness without having recourse to the score, the student is prepared for the final step—the *interpretation* of the composition.

If this step be not taken, what has already been learned is as the formless block of marble before a Pilon has chiseled out of it his matchless "Three Graces," or the naked canvas before it has received the magic touch of a Leonardo, or a Raphael; it is like a majestic landscape, whose resplendent beauty might thrill the soul of poet, or peasant, but lies hidden in the sable garb of night—before the beaming orb of day has risen above the eastern hills to unfold the scene to mortal view. It is like the fiery words of an Othello or the impassioned phrases of an Antony uttered by a drawling dullard, rather than by a Garrick or a Kean. Put the words of an oration in the mouth of him who has it not in his nature to appreciate their true sig-

nificance, and they are commonplace and lifeless—but put these same words upon the lips of a Calhoun, a Choate, a Pitt, or a Fox, and they become instinct with life and thrill the hearts of listening thousands.

And so with Music; the beauty and grandeur of a "Beethoven" *Sonata*, the fire and passion of a "Liszt" *Rhapsody*, or the grace and tenderness of a "Chopin" *Nocturne*, is but faintly conveyed if played by an average amateur; but under the inspiring touch of a Paderewski or a Joseffy it becomes a revelation! the one is but a combination of harmonious sounds—the other reveals the *idea* of the composer; the one is a shadow —the other is the substance, in all its true sublimity.

How are we to give expression to the composition? —to breathe life into it, and give it color and form?

Let it be remembered that in music, as in literature, there are phrases, sentences, and paragraphs; some are *bon mots*, drawn from a seemingly inexhaustible treasure of wit and humor; others are graceful and flowing; others brilliant and picturesque; some are tender and pathetic, and some profound and majestic—each distinct and recognizable by him who possesses true artistic perception. The ability of the player to execute a composition with fidelity to the score and yet have another subject engross his mind at the same time may, it is true, constitute *technical* perfection—but to insure an *artistic* performance, the mind, instead of drifting about at haphazard, must be concentrated on *expression*; to do this the player must have within him the germs of true musical *feeling*; if he be thus en-

dowed he can by proper training become a cultured musician; if there be *expression* in his *soul*, it can be imparted to his finger-tips, and with proper application he can learn to interpret the works of the great masters of music; but natural musical instincts he must have to begin with; and he must study the right kind of music, in the proper manner. More than this there can be but little said; no definite rules can be laid down for giving true expression to a musical composition; the *letter* can be indicated, but the *spirit* must exist within the player himself; the garb in which expression should be clothed may be described down to the finest detail, but there must be a *soul* within the raiment—the heart, no less than the head and the hands, should be trained; its finer sentiments, its higher impulses, should be developed by proper exercise; then, and not until then, can a worthy musical composition be truly interpreted.

The selection of compositions for memorizing is a matter whose importance cannot be overestimated. The musical as well as the moral nature may, by being fed with improper food, lapse into a stagnant and unhealthy state, or it may, under auspicious conditions, expand into most noble proportions gathering new life and symmetry through ever recurring communion with the "choice and master spirits" of the Divine Art. In the early stages of study, while the musical taste is yet in embryo, it is best to leave the selection of compositions for practice to a competent teacher, whose judgment will be far superior to the student's as to the

character of composition which is best suited to his abilities. In no case should an inferior class of music be tolerated in the student's repertoire; the trashy compositions which infest many of our music stores should be shunned, as they demoralize the taste, and operate as a barrier to progress in musical culture. Especially should works of the great masters constitute the warp and woof of his study, until their sentiment is wrought into the very fibre of his being. The student need feel no apprehension that he may become too classical in his tastes; the "classical," in music, means its highest development, and he who attains to a true understanding of music may dwell in a world of serene exaltation whose beauties and wonders are ever expanding; he may revel in a perennial feast of sublime sentiment; of that inspiration which belongs only to genius, to which the peerless creations of such masters as Beethoven, Mendelssohn, Mozart, or Wagner, bear abundant testimony—creations which cannot but be the "applause, delight, the wonder" of mankind through all time.

In committing to memory a musical composition, as in other kinds of memorizing, the student should begin with small tasks, to be gradually increased as the capacity for learning them develops, and with consci-entions, intelligent study, the student will in time be able to accomplish with ease that which he would at first have deemed quite impossible:

"One thing at a time,
And that done well,"

is as useful a maxim to be followed in memorizing a musical composition as in any other line of effort; each detail should be fully mastered before the next is commenced—and thus, little by little, will proficiency be acquired.

Besides patience, determination and assiduity, another important requisite is self-confidence—and in no way can this be so quickly attained as by playing before an audience. At first the player will no doubt feel more or less embarrassed; many a person has thoroughly memorized a composition, only to find himself all at sea on attempting to play it before an audience, and perhaps forced to the humiliation of a complete break-down—which might have been avoided had he acquired self-possession by frequently playing in the presence of others, and attained such a power of absorption as to become oblivious, for the time, to all his surroundings—for the possession of this faculty is indispensable to the artistic interpretation of a musical composition.

VOCAL MUSIC.

"Let me write a nation's songs, and I care not who writes its laws." VOLTAIRE.

"Then read from the treasured volume
The poem of thy choice;
And lend to the rhyme of the poet
The beauty of thy voice."

LONGFELLOW.

"My soul is an enchanted boat,
That like a sleeping swan doth float
Upon the silver waves of thy sweet singing;
And thine doth like an angel sit
Beside the helm conducting it;
Whilst all the woods with melody are ringing."

SHELLEY.

As Poetry is more easily memorized than Prose, so Music is a most powerful aid in the memorizing of poetry. The melody of a song is frequently the key by whose help the words are recollected, and it often happens that the melody will cling to the memory after the words have vanished from remembrance.

Through the power of Association the words and the air may be so linked together in memory that the revival of either recalls the other, the recollection of the melody being usually the least difficult.

There is no influence in life which surpasses that of song, on the human emotions. The singing of a simple song has brought back many a tender memory; it has softened many a pitiless heart; it has been the inspiration of many a noble action. In the sanctuary, on the battle-field, at the fireside—everywhere—song wields an influence beyond the power of tongue to describe or pen to portray. The vital reason of this is that in a well written song the musical ideas and the words are wedded, the sentiment of the latter being accentuated through the medium of melody and rhythm, and producing an effect on the emotions not possible by means of the words alone—even in the case of hearers with

little or no musical knowledge—while in instrumental music a high order of artistic taste is necessary in order that the composer's ideas may be interpreted with fidelity. In (spoken) language but few shades of emotion or sentiment can be exemplified; in Music the possibilities of expression are beyond computation. As the highest significance of Love cannot be indicated in set terms, neither can the fullness of musical expression—whose signification words are impotent to convey.

One of the most notable instances of the wonderful power of song over human passion is told of Stradella, a celebrated Italian composer and singer of the seventeenth century. On account of a love affair he had incurred the enmity of a nobleman, who hired two bravos to take the composer's life on the first good opportunity that presented itself. Stradella had just left for Rome, whither the assassins followed him. Learning that on the next day he was to sing the leading part in an oratorio which he had just composed, they obtained entrance to the theatre and concealed themselves behind the scenes, intending to stab him to death when he was off his guard; but they were so deeply affected by the music that when the critical moment came their hearts failed them, and on Stradella's retiring from the stage they confessed their mission and begged him to leave Rome at once and thus save his life.

The marvelous results achieved by the most noted evangelists are due in no small degree to the power of music—pathetic songs or hymns being introduced at

favorable intervals during their services. The wonderful success of Moody and Sankey, Whittle and Bliss, and other revivalists, is a well-known illustration.

Who that ever heard Titieus sing "Kathleen Mavourneen," or Adelaide Phillips sing "The Rosebush," or Patti, "Home, Sweet Home," can ever forget the effect produced by those pathetic strains? Such songs as Schubert's "Erl King," "Wanderer," and "Serenade;" Beethoven's "Adelaide," and Gounod's "*Salve di Mora*" must ever stand out among the noblest gems that ever emanated from the soul of genius. The heroic measures of the *Marseillaise* and the "Star Spangled Banner," the gently flowing phrases of "Sweet Afton" and Kucken's "Slumber Song," and the plaintive strains of "Auld Robin Gray," "Land o' the Leal," and "Robin Adair," will issue from human lips when the temples and palaces and monuments which are the wonder and pride of our age shall have crumbled into dust; songs like these can never die—and yet they are all simple in sentiment, devoid of embellishment.

Yes, it is the simple songs that live; the songs that appeal to the great heart of humanity; that express the sentiments and emotions of all mankind. The secret of it is that there is in them the harmonious union of sentiment in words and melody—which there must be for the hearts of men to be swayed by the power of a song. A poem of lofty conception set to waltz music, or one of humorous nature clothed in sombre garb would be the height of incongruity; the songs that live are written as by inspiration; how it is

done and why they live cannot be expressed in formal terms—it is so—that is all; there is a true unity of words and music which one possessed of musical instincts can appreciate, but not explain.

Then, too, there is the *way* in which a song is sung; the interpretation must be faithful; the singer must *feel* what he is singing; if he does not neither will those who hear him be affected; as Cicero says: "Let him who wishes to move the feelings of others show that he himself is affected."

But there is no reason why any person with musical instincts and possessed of even a moderately good voice cannot become a true artist. Other things being equal, a person thus endowed by nature who can sit down at the piano and sing with expression a few well-chosen songs from memory, playing his own accompaniments, is certain to not only derive therefrom a world of enjoyment, but also to confer real pleasure to all who hear him, and he will be a welcome guest at many a hearthstone to which he would otherwise have ever remained a stranger; and why such a large proportion of singers are, when invited to sing, obliged to depend on their notes, or an accompanist, or both, is due more to their lack of diligent, intelligent practice, than want of musical ability.

This need not be; a person having a voice of passable quality to start with, and who is endowed by nature with even ordinary musical ability, with fairly good opportunities for its development, should possess a goodly repertoire of songs which he can sing from

memory with expression and to his own accompaniment; and this can be done by properly directed effort.

Most singers are poetical in their nature—they cannot be otherwise, for Music and Poetry are twins; the love of either commonly carries with it the love for the other, and therewith a natural facility for memorizing it; simple songs seldom have other than simple accompaniments, and thus it rarely happens that serious technical difficulties have to be overcome to attain the desired object.

It cannot be impressed on the student with too much emphasis that, aside from the gratification which the singer himself may derive through the exercise of his accomplishment, the main purpose of it is to *impress others;* to cause the sentiment of the song to affect *them* as it does *him;* to lift their souls, as his, in sublimity, or move their hearts with tenderness or pathos, or fill their spirits with gayety—whatever may be the meaning of that which he is interpreting. This can be done when the singer is filled with the sentiment of the song and is oblivious for the time to all external influences; and in proportion to his own faithfulness of interpretation will his hearers be affected; he himself must feel the true spirit of his song if he would have *them* feel it.

Suppose that two attorneys of equal powers are to address a jury in a case which is likely to be decided by sentiment rather than the sober judgment of the jurors. One of the lawyers reads his argument from a carefully worded manuscript; the other, ignoring ex-

ternal aids, talks straight *from the heart;* is there any question what the verdict is to be? Imagine an Erskine, a Choate, or an Ingersoll, addressing a jury from manuscript!

Compare the preacher who *reads* his sermons with one who *talks* to his congregation—which one makes the deeper impression? What "manuscript" preachers can compare, in influence over a congregation, with such sublime pulpit orators as were Whitefield, Chalmers, and Spurgeon? Who ever heard of Chatham, Burke, or Fox *reading* a speech to the House of Commons? or Webster, Calhoun, or Conkling speaking to the United States Senate from manuscript! So is it in song; the impulses of men cannot be stirred, their hearts cannot be touched, except the speaker or singer abandon himself to the sentiment of his theme; that he cannot do if there be aught to distract his attention; in other words, he must *memorize* his theme; the speaker must memorize its spirit and the singer its letter as well as its spirit.

The ability of a singer to carry in his memory a goodly number of songs which he can sing with taste and feeling, playing his own accompaniments, is worth all the study, however arduous, which may be devoted to it, for the satisfaction both of feeling independent of mechanical aids, and of being able to "wreak the thoughts upon expression." Mechanical singing soon grows tiresome, however fine the voice and correct the phrasing, for the vital principle is lacking—there is no *soul* behind it all; if the singer does not possess in-

spiration he cannot impart it; he is a mere machine; the letter he may translate—but not the spirit.

In memorizing a song so that it may be rendered with fidelity of expression, the melody will naturally be learned before the words, and it will be done with less effort; and perhaps no better advice can be given for memorizing a melody than to suggest the strictest attention and the avoidance of unnecessary repetition, that the student may not tire of the song before all its details shall have been fully mastered.

The melody having been learned, the words should be memorized and associated with the melody, careful note being taken of any rhythmic differences in the stanzas. The melody of a song is usually written to correspond with the rhythm of the first stanza; there may be other places, however, where the singer needs to adapt melodic rhythm to the rhythm of the text—which is of importance to insure a proper interpretation of the song.

Attention should next be given to the punctuation of each stanza, the "breathing spots"—care being taken to place them at natural intervals in the text, never between syllables, nor too far apart.

It is necessary to then study the marks of expression, and when he shall have familiarized himself with them the student should try to sing the song through, independently of both the notes and the piano. This is a very essential feature of the practice, that the student may the more readily detect any errors of intonation, phrasing, or of any other character, which,

being stripped of all disguise, are thus made to stand out with uncommon prominence. When the student can sing the song through correctly without the aid of the piano, the accompaniment should be learned, independently of both the melody and words, the fingering and phrasing being as carefully studied as in that of an instrumental solo. Upon this being accomplished the whole should be practiced together until it can be rendered with absolute correctness, the accompaniment being executed almost unconsciously, and the vocal tones produced with like facility, and yet with sympathetic expression. By this time it may be assumed that the student has, through familiarity with the song, become more or less imbued with its spirit and is able to express its general sentiment with reasonable fidelity. He should then study the expression with the utmost care, giving the closest attention to every detail which will tend to bring out the meaning of the song; this should be continued until, while singing, he can put himself in complete sympathy with the very *soul* of the song. Mrs. Siddons, while acting some of her most impressive parts, actually believed herself for the time to be the very character she was representing. so did Talma, the greatest of French actors—also Kean, Salvini and others.

This complete absorption into the spirit of that which is being interpreted evinces a true artist; and the vocalist who when singing a song can the most thoroughly divest himself of self-consciousness and put himself into the most complete sympathy with the *soul*

of his song, has advanced the farthest in artistic excellence.

It by no means follows that proficiency in the memorizing of vocal music and its faithful rendering, includes the learning by heart of the accompaniments also, which is advised only in the case of simple songs where the accompaniments are within the technical ability of the singer to perform, without the sacrifice of expression in singing. Many of the noblest songs that ever issued from the soul of genius have accompaniments too elaborate for the singer to perform himself, with justice to the vocal interpretation; in such cases the singer should not try to memorize them, but secure the services of a skilled accompanist when singing to an audience.

The habit of now and then reviewing one's acquirements in vocal or instrumental music is one whose cultivation is of the highest importance. If a piece of music is worth learning at all it is worth retaining in the memory, and having once been memorized it should be preserved at whatever cost of time and labor—and the only sacrifice necessary is to sing or play it over now and then, to be sure that it can be produced on demand. While the memory should be trusted, it should not be imposed upon; it is not divinely instituted to be infallible at all times, and the student who imagines that whatever he once puts away in his memory is certain to remain there indefinitely without the slightest attention being paid to it, is certain to be grievously disappointed.

And now we come to a feature of musical culture different from any which have yet been discussed; from a true musical standpoint it may be considered the crowning acquirement of them all. It is the ability to appreciate a first-class musical performance of whatsoever character—and this may be accomplished by simply being a *good listener*, even though the theoretical and technical musical knowledge be slight.

While there is an adage that "he cannot appreciate a musical composition who cannot appreciate its difficulties," yet that is only partly true, for it by no means follows that elaborate compositions containing uncommon technical difficulties are superior in true musical worth to pieces which are simple in construction but more melodious than the others. It is true that an intimate knowledge of the theory and practice of music is essential to the highest appreciation of a musical performance—but it is also true that a person who possesses an instinctive love of the "Divine Art" may, even though lacking in musical education, so train his faculties that he can listen to a symphony, or other classical musical performance, and retain in his memory its essential details. Excellent musical critics there are who have become so not through profound knowledge of the laws of harmony, but by listening frequently and attentively to only the best class of music. By these means they have cultivated their memory of musical sounds to a high degree of perfection—from the simple notes of a ballad to the interwoven strains of a "Beethoven" symphony, or a "Wagner" overture,

whose majestic measures represent the most consummate touches of the composer's art.

That is a very different thing from memorizing the melody, words, and accompaniment, of a song, or the score and instrumentation of a composition written for any musical instrument. In the case last mentioned, what the student has memorized may be enjoyed by others as well as himself; but the rapture imparted by the thrilling strains of a grand orchestral performance cannot be transmitted by the listener to others—it can survive only in his own memory.

It being possible, if he be within a favorable environment, for a person of native musical instincts not versed in the theory and practice of music, to attain excellent powers of musical criticism, the following suggestions are given for his guidance: The student who wishes to attain this end need not expect to advance rapidly—he must be content to begin at the bottom of the ladder and climb slowly—to proceed from the simple to the complex—not by bounds, but step by step; he must *grow* in musical understanding, and the growth must be natural, not artificial.

The ordinary listener to an artistic orchestral performance does not, and cannot, gain more than the faintest idea of its merit; he hears, but not with understanding—and thus there appears a vagueness about it all which he cannot fathom; and yet in a great orchestral work there is not a note that does not represent a musical idea; nothing is written at haphazard, just for the sake of "filling in"—every note is set

down with a definite purpose in view; but if the listener has no conception of that purpose, many of the most delightful harmonic effects and exquisite touches of phrasing are, in a sense, lost on him, and he goes away with only the most superficial idea of what he has listened to; and yet it is within his power to so train his ear, his taste, and his memory, that a grand symphonic concert will be to him a veritable feast of delight—not only while he is listening to it, but in all after-time; its euphonious echoes will often reverberate in the chambers of his memory, filling many an otherwise dull moment with gladness and inspiration. A musical feast does not terminate with the ringing down of the curtain: it may be partaken of again and again in happy memory by him who rightly hears it; that which once seemed intricate and obscure becoming simple and coherent.

If that master-mind of music—Beethoven—could evolve from the depths of his imagination such a towering monument to his surpassing genius as his wonderful Ninth Symphony, when unable to hear a sound—why should it not be possible for him who can *hear* a fine musical performance to so hear it that he can carry its essence, at least, in his memory for many a day?

It *is* possible, and the secret lies in possessing the power to concentrate the attention upon any single instrument, however great or little its prominence.

In a great central telegraph office the click of many instruments may be heard at the same time, there seeming to the bystander to be an interminable chaos

of sounds; but the skilled operator has so trained his ear and his attention that he can exclude therefrom the sounds of all but one instrument—whichever one he wishes. So may he who listens with understanding to a great orchestral performance hear only the instrument that he chooses, and follow the theme from one instrument to another as each takes it up, and trace the echoes and responses, the lights and shades, the sweet melodies and grand harmonies, as they crowd upon the enraptured ear. All this may the music lover achieve if he wills so to do; let him study intelligently and school himself to be patient and persevering, beginning at the simple and advancing by degrees towards the complex, and as each step is taken new interest will be awakened and ultimate proficiency the more assured.

To begin with, let the student listen attentively to a simple melody—one that he has not heard before—a hymn or a ballad—and then try to reproduce it from memory. If not entirely successful at first let him try again and again, and ere many trials he will find himself able to recall almost any simple melody of reasonable length after a single hearing.

Let him next take up the various parts in a vocal quartette, listening to only one part at a time; it is not necessary that he should commit each part entirely to memory—the chief purpose being to cultivate the ability to *listen* to it, excluding all other sounds from the ear and endeavoring to retain only such portions as contain a melody, however short. An easy way of

securing this practice is to attend regularly some church where there is a good quartette choir, with well-balanced voices—the singing of the hymns and anthems affording excellent opportunities for the student to practice concentrating his attention on any one part. Having mastered this task, let the student listen to the soprano and bass together until *both* parts can be heard *separately* and yet *together;* then let him associate with the soprano, the alto and tenor, each in turn, until he can hear the two parts as before. When that is accomplished the student will have advanced to a point where his study will possess a far greater relish than at first; the singing of an anthem will convey to him a different meaning from ever before, and he will find rare enjoyment in listening to all the four parts at once and thus further cultivating his powers of concentration. This practice should be continued from week to week, as long as is necessary to secure satisfactory results. The student should also attend first-class vocal and instrumental concerts as often as possible, which will greatly assist his advancement.

But the grand opera and the symphony furnish the crowning opportunities for cultivating to the highest possible degree the musical taste and powers of criticism. The peculiarities of tone possessed by each of the different orchestral instruments afford the composer the most ample scope for the exercise of his genius and therefore render possible the greatest depth and variety of ideas for interpretation. To make satisfactory progress in the study of this most advanced

form of musical production, it is not enough to attend the public performances of the operas, symphonies, or other orchestral compositions; the student should try to be present at all the rehearsals also, and thus by hearing the compositions many times over, he may *grow*, as it were, into a knowledge of their qualities of excellence—an appreciation of which cannot possibly be gained at a single hearing, however attentive and cultivated the listener. If the student would acquire an intelligent conception of a great orchestral composition he must hear it performed over and over again, that its strains of gladness and of pathos, of tenderness and of passion, of hope and despair—the varied lights and shadows of musical expression—may be imprinted on his memory in colors that can never fade.

These suggestions are offered to students to whom a musical education has been denied, but who are desirons of so cultivating their musical faculties that they can appreciate and can carry in memory the essential details of a classical musical performance. For the educated musician the road will be easier to travel and greater heights can be attained; through his knowledge of the laws of harmony, and the consequent ability to prosecute his studies on a scientific basis, he has a decided advantage over the one without musical knowledge—but the same general plan should be followed in his case also.

In the cultivation of the musical memory there is this to be truly said which cannot be done in the case of any other branch of memory culture—it is the most

thankful of them all; it pays the highest interest on the capital invested; its delights are lasting—not merely ephemeral. Music affects the emotions only, not the intellect; it has a most wonderful power to soothe, to cheer, to exalt; it is a perennial well-spring of gladness; its supply is unfailing.

And as music is, so is its memory: We can *think* the strains of a familiar song, and it seems as if we once more heard them in all their native beauty, and they linger in the memory and continue to delight us with their tender accents and to remind us of the circumstances under which they first were heard.

"The music in my heart I bore,
Long after it was heard no more."

The world of music is a world by itself, and they who enter it leave behind all cares, all sorrows, all resentments—and in the melodies and harmonies which there swell forth in measures of grandeur and delight, find sweet tranquillity and joy untold.

But he who would enter this world can do so by no royal road: it must be by patient, persistent, intelligent effort; it must be by the right cultivation of those faculties which have the most direct bearing on the object to be achieved.

And not the least important is Memory.

CHAPTER XVIII.

VAGARIES OF MEMORY.

"But this mysterious power that binds our life together has its own vagaries and interruptions." EMERSON.

"Ideas * * * often vanish quite out of the understanding, leaving no more footsteps of remaining characters of themselves than shadows do flying over a field of corn." LOCKE.

While it is true that the degree to which the memory is possible of development through proper training surpasses all conception of the ordinary mind, yet it is no less true that in spite of all the culture which may be bestowed upon this faculty—with all its remarkable power of reproducing impressions of the past, and its wonderful fidelity to detail—still it will now and then play its possessor very strange tricks.

For instance, it may give us only a portion of what we are in want of, and stubbornly refuse to yield up the rest, however persistently we coax, and even goad it. Perhaps we wish to recollect a person's name, and for our very life we can recall only the first letter or two;

or perchance we start in with all the confidence imaginable to quote a well known proverb or a passage from some familiar poem—when to our discomfiture we find it impossible to proceed beyond a certain point; we try again and again to no effect, and then regret most keenly that we made the attempt! As likely as not the missing letters or words will turn up in our memory soon afterwards, but the meet occasion for their use is past, and our embarrassment fully accomplished—so there is nothing left for us but whatever consolation we can derive from the reflection that our memory was not really defective, but only happened to be a little tardy in responding on that exceptional occasion! The fact is that even the best memories are not to be trusted at all times and under all conditions; what may be recalled with ease at one time, perhaps cannot be revived in the memory at another by our most strenuous exertions.

However we may felicitate ourselves on the power and reliability of our memory, yet experience forces us to the conclusion that it has an element of treachery about it after all; we intrust something to its custody, relying implicitly on its fidelity—but at some critical moment, when we make a demand for temporary use only, of that which we placed in the safe-keeping of memory, we find it to be most provokingly recreant to its trust—our self-pride at the same time receiving a shock of no slight severity! And not only is our memory liable to be extremely unfaithful when we have especial need for its loyalty, but sometimes it assumes

to furnish us with what we are seeking, assuring us in the most emphatic terms that its information comes from an infallible source, when it is really in the wrong! The most notable instances of the latter shortcoming are those in which mental pictures are most easily formed of what is sought to be recollected—as is especially the case with words and figures; thus remarks are inaccurately quoted; prose or poetical passages are inexactly cited, and statistics and other information in which numbers are involved are incorrectly repeated. Mistakes as to the lapse of time are also common.

And to whom has not the experience occurred of complete failure of the memory to properly respond at a critical time? A name that we deemed to be thoroughly intrenched in the memory may fail to come forth at our command—through which cause we may be placed in an embarrassing, and even ridiculous, position; or perchance some familiar phrase may refuse to issue from our lips when we have a pressing use for it; or it may be that we find ourselves unable to promptly recall some familiar fact.

When abnormal conditions exist, affecting the brain or body, or both, the disease may so peculiarly act upon the memory as to cause a partial or total lapse thereof, often producing the most inexplicable results; indeed, next to the marvelous degree to which the memory can be developed, the most curious and remarkable fact is its lapse; through sickness or some shock to the senses the impressions of years may be completely obliterated —to be recovered either quickly, or only gradually, or

perhaps not at all; instances are known in which all the knowledge acquired previously was entirely effaced, the faculty of gaining and retaining new information not being impaired. Sometimes a language is completely erased from the recollection, the memory of other languages not being affected. One person may lose his memory of words, and another of things, although the former is more common; and in this connection the curious fact may be stated that when the memory of words is gradually lost, the retrogression is invariably in the following order in the principal parts of speech: First, proper nouns; next, adjectives; then verbs; and last, common nouns.

A remarkable instance of total loss of memory is the following: At Brighton, England, some years ago, a woman whose appearance betokened education and refinement, was sitting on the sea shore one day, apparently taking enjoyment in viewing her charming surroundings, when, without the slightest warning, she felt a shock in her head—no doubt caused by the bursting of some blood-vessel. From that moment her memory was a complete blank; she could not recollect anything whatever of her past life—not even her name nor that of any of her friends, and there were no letters or other evidence about her by which she could be identified. Every possible attempt was made to discover some clue to her identity, but in vain; she was placed in the workhouse, and a great portion of her time was spent in bemoaning the loss of her memory, not a spark of which has since returned to her.

In 1895 a young man named William E. Higgins, living in Sandusky, Ohio, left his home to seek employment, which he soon secured with an electric company in Elyria, only a few miles distant. He had remained there but a short time when all at once he disappeared, and for months his family could not find the slightest clue to his whereabouts, although hundreds of dollars were expended in the search. Finally his father traced him to St. Louis, where he was in the employment of a prominent electric company. The son utterly failed to recognize his father, did not remember his mother nor any of his brothers or sisters, and did not even know his own name. To him life began in a hospital at Elyria in the preceding December—he could remember nothing which had happened before, not even that he had ever gazed upon a human face—the whole world was an unlearned book. Higgins' father prevailed on his son to return with him to Sandusky, hoping that the sight of faces and scenes that he had known since childhood, and the sound of once familiar voices, would help to restore his lost memory—but to no effect; to him all were strangers. He remained at home several weeks, struggling to recollect something that would serve as a nucleus for gathering together the threads of his memory, but he was finally compelled to give up the attempt in despair, and returned to his work at St. Louis.

An English gentleman fell from his horse and received a severe contusion on the head. He recovered from the injury in a short time, but his memory was a

complete blank and he was compelled to begin a second education—even to the extent of learning the alphabet over again!

Dr. Shields, a noted physician of Melbourne, Australia, tells the following remarkable experience:

One day in 1893 a man about thirty years of age called on him in his office in the police barracks, requesting to be informed who he was, saying that his memory had failed him. At first the man was believed to be crazy, but it soon became evident that his statement was true, and that he could recollect nothing whatever of his past life. Strangely, his memory was eventually restored through the power of music. Some months afterward he was noticed listening intently to the singing of the Sunday jail service, and he remarked that it seemed as if he had heard those sounds before. When told that what he had listened to was music he did not seem to understand, but after the service Dr. Shields took him to the organ and showed him how the sounds were produced, by striking the keys with his fingers. The man thereupon seated himself at the instrument, touched several notes at random and then happened to strike a chord in harmony. Instantly his face brightened up and he began to play a selection from the "Creation," performing it with surprising correctness; he used the pedals and stops, evincing familiarity with the instrument, and from this beginning he gradually recovered his memory.

In Beck's "Medical Jurisprudence" is related a pathetic story of a young clergyman who was about to

be married, but was accidentally shot in the head by a friend two days before the happy event was to take place. He was prostrated for a long time, but ultimately recovered from the injury, when it appeared that he could recollect nothing but the idea of the supposed approaching marriage. He was completely absorbed in that one thought and could never talk on any other subject. His wedding was always two days ahead. He lived until he reached his eightieth year, with that one idea dominating his whole life.

A similar story is told in Nevins' "Disorders of the Brain." A young lady who lived in a rural district of England about a mile from the stage-road, went one day to meet her affianced, who was to pay her a visit. The coach duly arrived, but instead of her intended husband a friend alighted, who conveyed the sad news that her lover had suddenly died only a day or two before. She was completely prostrated by the shock, and on recovering it was found that she had lost all consciousness of her calamity. She lived to be an old woman, and scarcely a day passed during the rest of her life that she did not visit the spot which had been the scene of her misfortune, in the expectation of seeing her lover alight from the coach. This idea had supplanted all else in her mind. A more pathetic illustration of lost memory can hardly be conceived.

A curious case of the lapse of memory is that of Linnæus, the great naturalist, who in his old age listened with delight to the reading of his own works without recognizing their authorship.

It is a well established bit of history that Sir Walter Scott dictated the "Bride of Lammermoor" from a sick bed; it was published before he recovered from his illness, and when the book was placed in his hands for perusal he did not remember a single scene or character that he had created; he could recollect only the general nature of the plot, which he had outlined in his mind before his illness.

The following are instances of a partial lapse of memory:

In August, 1894, a young man named Herbert Spencer, a medical student at Lawrence, Kansas, suddenly disappeared and was not heard from for two years, when he was seen and recognized by an old schoolmate, in the Philadelphia city hospital. The time that had elapsed was a complete blank to him; he remembered nothing which had happened during that period, and failed to recognize anybody that he had ever known, although he had not forgotten his knowledge of language nor what he had learned at school. He remembered only one member of his family, a younger brother. The scenes and associations of former years had vanished completely from his memory; life to him seemed to have just begun. He was able to resume his studies where he had left off two years before, but could recollect none of his teachers or classmates nor any of his surroundings.

A writer in the "Popular Science Monthly" tells of a business man with whom he was well acquainted, who suddenly lost a part of his power to read and make

mathematical calculations. He had forgotten the letters d, g, q, x, and y, but remembered all the others. He had to spell out words like a child, and was unable to read words containing three letters without considerable hesitation. He could not add together two numbers of which 6, 7, or 8 formed a part—those figures had gone entirely out of his memory. He was able to understand and talk, his mind was clear and his general memory good, but the letters and figures above mentioned had vanished from his recollection as completely as dew from before the sun.

Sir Henry Holland tells of once descending on the same day two deep mines in the Hartz mountains. While in the second mine, overcome with fatigue, he suddenly became unable to converse in *G*erman with his guide, although familiar with the language; every *G*erman word and phrase had deserted his memory, and it was several hours before he recovered them sufficiently to talk.

The poet Beattie tells of a gentleman who on recovering from a fall, found that he could recollect nothing that had happened during the preceding four years, and was obliged to have recourse to the public journals for information thereof.

Another gentleman received a blow on the head and at once lost his memory of Greek, of which he had been a master, although his native language he remembered perfectly.

Many instances are recorded of persons while delirions repeating words and phrases which they had

long since forgotten, and even of speaking in a tongue which had long ago faded from their memory—the language of early childhood.

A doctor tells of being called in to see an old man on his death-bed, who was muttering words which the nurse did not understand, but which the doctor recognized as part of a Roman litany and so informed the nurse, saying that the man must be a Roman Catholic. "That is impossible," replied the nurse: "as I have known him for more than thirty years, and know that he has been a free-thinker during all of that time at least." On investigation it was found that during the first five years of his life the patient had been trained in the Catholic faith, but soon afterwards became surrounded by adverse influences which had continued during the remainder of his life.

Coleridge tells of an illiterate woman who was seized with a fever, and during her delirium uttered passages in Latin, Greek, and Hebrew. This excited much wonder at the time, but on tracing back the woman's history it was ascertained that when nine years old she had been adopted by a clergyman who was in the habit of reading aloud to himself from the classics, repeating over and over passages which impressed him. His books were found and examined, and in them were the identical passages repeated by the sick woman.

Goethe was acquainted with an old man who in his last sickness began to repeat in his delirium beautiful sentences from the Greek classics, which he had been required to commit to memory when a boy, since which

time (a period of over fifty years) they had never passed his lips; they were implanted in his memory all the time, but would ever have remained dormant except for some unaccountable cerebral action that again gave them expression.

A case is related by Sir Astley Cooper of a soldier who was wounded in the head and remained in a state of semi-consciousness until, through a surgical operation by the hospital surgeon, his power of speech was restored. When he spoke, however, it was in a language that no one about him could comprehend. After a time a Welsh woman came to the hospital, and on hearing the soldier speak, at once recognized the language as that of her native country. The man had not been in Wales for thirty years, and not having conversed in the tongue at all during that period, had well nigh forgotten it, yet now he spoke it not only intelligibly, but fluently, and could recollect no other. More curious still, when the soldier recovered from his wound his English came back to him and Welsh was again forgotten!

Some years ago Dr. Scandella, an Italian physician of New York City, while on a trip in the South was seized by yellow fever and was delirious during the whole course of the malady. In the first stage of the disease he spoke only English; when the fever was at its height, only French; and only Italian just before his death.

A remarkable case was that of Franz Schonzenwurtz, a merchant of Worms, Germany. In 1896 he

went to Antwerp on a business trip, expecting to return in three days. While there he was seized with the first symptoms of a mental malady, imagining that he could hear voices, which kept continually telling him to move on. In obedience to these imaginary voices he embarked for England on the first steamer. His malady kept increasing, and on his arrival in England the voices told him to go on to America. He did so, and by the time of his arrival in New York he had forgotten his name and all his past life, the only thing he remembered being the fact of leaving Antwerp. From New York he went to Philadelphia and was admitted to Blockley Almshouse, where he was put in the insane department. On the next day he suddenly got out of bed, rushed to a window and sprang out, falling about twenty-five feet and meeting with severe injuries. For two weeks he hovered between life and death, all the while out of his mind, and often muttering unintelligible sentences. When the crisis had passed he opened his eyes, intelligence began to return to him, and in a short time he was able to recall not only his past life, but all that had elapsed since his leaving home several months before.

Among the most curious mental phenomena is dual personality—two distinct and alternating states of consciousness in the same person.

In a hospital at Paris some years ago was a patient who lived a model life while in one state of consciousness, but every now and then would pass into another state in which he was vicious, violent, and addicted to

profanity. Those whom he knew in either state were strangers to him in the other; in either one of his characters he could recall nothing of what he had said or done in the other, but did remember what had happened when he was previously in the same state of consciousness.

Another case is recorded of a man living in Brooklyn who was arrested some years ago for bigamy. He had been married for several years and seemed devoted to his wife and children, but every now and then would disappear and remain away for weeks, and when he returned insisted that he knew nothing of where he had been or what he had done. Finally it was ascertained that he had married another woman, whom he would at intervals leave as unceremoniously as he did the first wife. When he was confronted by the second woman he had no recollection of her. On discovering the truth he was appalled, and learned for the first time that he was an epileptic.

Somnambulists possess double consciousness, the chief points in which their cases differ from the ones just mentioned being that their secondary state of consciousness is usually during the night, the normal state being resumed in the day-time, the intervals thus being short instead of reaching into days and weeks. A physician of Aberdeen relates a remarkable case of a young lady who, while in this state, was able to converse intelligently with those around her, asking and answering such questions as would naturally arise in the course of conversation. On awakening she remem-

bered nothing of what had happened, but on falling into the somnambulic state again she could repeat everything which had been said when she was in that state before. On one occasion she repeated the whole Episcopal baptismal service. At another time, while in a state of somnambulism, she was taken to early church, where she seemed to join in the service with deep devotion. When the spell was over she had not the faintest recollection of what had happened, but in a similar state the next time gave a faithful account of what had taken place on the former occasion. She possessed two distinct memories, one for each state of consciousness.

A peculiar case of double consciousness is that of Blind Tom, the negro pianist prodigy; and not the least remarkable feature of it is that he was frequently in two states of consciousness at one and the same time. While executing some musical composition he would repeat expressions that he had heard during the day, which indicates that one portion of his brain worked independently of the other part at the same time.

As a concluding illustration of double consciousness may be told the story of the man who mislaid a package while drunk, forgot where he had put it when he became sober, and had to get drunk again to find it!

But of all the vagaries of memory the most universal is "Absent-mindedness." Almost every person of strong mental powers is more or less subject to the habit, and indeed it may be said that there are few who are not now and then under its spell, from the savant

who went to boil an egg for breakfast and put his watch into the boiling water, holding the egg in his hand to note the time of boiling—to the Irishman who was hunting in every imaginable place but the right one for his pipe, which all the time was in his mouth!

A conspicuous case of absent-mindedness is that of Sir Isaac Newton. It is related that his friend Dr. Stukely once called to see him, and on the name being announced Newton sent word to his friend to be seated and he would join him shortly. The Doctor sat in the dining-room for some time, when it became evident that Newton had grown so absorbed in his studies as to forget entirely about his friend's visit. Dinner was served, which the Doctor proceeded to demolish. Finally Sir Isaac entered the room and seeing the remnants of the meal, apologized and said: "Believe me, my dear friend, I quite forgot that I had dined!"

The following anecdote is told of Dr. Duncan, a distinguished Scottish theologian. Having to preach one Sunday in a church near Aberdeen, he concluded to walk, as the church was only a few miles distant and the morning a fine one. He walked slowly and on the way his mind became absorbed by some theme that had entered his thoughts, and time and space were as nought to him. On arriving at the church and seeing people entering, he thought it would be a very proper thing to join in the worship also. Addressing one of the elders, he inquired who was to preach. "Why, Dr. Duncan, of Aberdeen." It was only then that he "came to himself!"

It is told of the late Dr. Spring, of New York, that one of his parishioners saw him standing in front of the Post-office, staring vacantly about him. "Good morning, Dr. Spring," the parishioner said: "I am glad to see you." The Doctor replied, "Ah! thank you for telling me who I am: I expect a letter in the post-office, but was unable to get it because I couldn't recollect my name!"

It is told that Joseph Jefferson was one day introduced to General Grant, an event which would naturally have impressed him very strongly. A few hours later he got into the elevator of the hotel at which they were both stopping. A short, heavy-set man also entered, bowed to Jefferson and made some off-hand remark. "I beg your pardon," said the actor: "your face is familiar, but I can't recall your name." "Grant," said the stranger, laconically. In telling the story, Jefferson said: "I got off at the next floor, for fear I should ask him if he had ever been in the war!"

Jefferson also tells the following story on himself: He once went to a post-office in a small town where he was unknown, and asked if there was any mail for him. "What name, sir," asked the clerk. "My name? Oh! yes, of course: Why, I play 'Rip Van Winkle,' you know!" "Joe Jefferson!" said the astonished clerk. "Yes, Jefferson; many thanks," the actor answered as he received his mail and bowed himself out.

A young lady met an old acquaintance whose name for some unaccountable reason she could not recollect,

and after conversing a few moments said, "By the way, how do you spell your name? I am in doubt whether I have gotten it just right in my mind." "S-m-i-t-h," was the reply, to the lady's confusion!

The distinguished French author La Fontaine called one day to see a friend whose funeral he had attended only a short time before. On being informed that his friend was dead and buried he evinced much surprise, but soon recovering himself said, "It is indeed true, for I was at the funeral!"

Lessing was subject to extraordinary spells of absent-mindedness. One evening after having been out unusually late he returned and knocked at his own door for admission. His servant looked out of the window, and not recognizing him informed him that the professor was not at home. "Very well," said Lessing, "I will call another time," and thereupon left his own door!

Dr. Thomas, Bishop of Salisbury, was so subject to fits of abstraction that he entirely forgot the day on which he was to be married, and was very much surprised on his servant bringing him a new dress suit. "What is this for?" he asked. "Why, it is your wedding suit, my lord." "Oh! this is the day, is it? I had forgotten all about it!"

On another occasion a gnat stung him on the leg, whereupon he stooped down and scratched the leg of another gentleman instead of his own!

Perhaps one of the most ludicrous instances of ab-

sent-mindedness on record is that told at the expense of a distinguished western lawyer and United States Senator who was on his way to court in a great hurry, and chancing to overtake a friend, remarked, "I dressed in such haste this morning that I forgot my watch." A few moments later, he continued: "I wonder if I have time to go back and get it?"—and as he spoke he pulled his watch out of his pocket. "No, I haven't time," he concluded, after consulting the time-piece, and walked on. Upon arriving at the Court-house he hired a messenger to go after the watch, paying him a dollar for the service. In due time the messenger returned with the information that the time-piece could not be found, whereupon the lawyer exclaimed, looking up from his books and papers: "That is very strange! I wonder what can have become of it?" Then he took a quick glance at his watch and continued: "Well, it makes no difference anyhow, I can get along without it; the judge is late and there is plenty of time." And he put his hand into his pocket and handed the messenger another dollar!

As a concluding illustration may be told the story of the absent-minded college professor who was trudging along one dark night in deep abstraction, when he collided with a cow. Taking his hat off he bowed confusedly and said, "I beg your pardon, madam." Resuming his walk he shortly afterwards stumbled against one of the lady teachers, nearly knocking her over. Remembering his former experience he shouted angrily, "Is that you again, you brute!"

These illustrations of absent-mindedness are but a counterpart in some degree of the experiences commonly occurring in every-day life—and especially those which frequently befall persons of strong mental constitution.

The mind being profoundly occupied in some subject of contemplation, and finding itself suddenly confronted by conditions not in harmony with the subject of thought, becomes confused and unable to promptly adapt itself to the changed situation; until a sufficient time has elapsed for such adjustment the brain remains more or less oblivious to present surroundings, with the result that embarrassing and often ludicrous predicaments are produced.

There are people who scarcely ever walk along the street that they are not so deeply engrossed in some subject or other as to be oblivious to all or nearly all that is going on about them; their surroundings are scarcely impressed on their minds; they pass acquaintances without recognizing them, their eyes all the while fixed straight ahead, and yet not seeing anything —in short, they haven't their wits about them, and they keep on and on in the same way, year in and year out, until what at first was perhaps a chance fit of mental abstraction has grown at last into a fixed habit; and all this time what they may have gained in one way has been far more than offset in other respects.

As a general proposition it may be said that all vagaries of the memory, excepting what may be termed

"absent-mindedness," are caused by disease or by some shock to the nervous system. Just how and why the brain works as it does in such cases may be considered as among unsolvable problems; it often happens that no remedy is possible; nature may work out a cure and may not; to do so it must bring about a return of normal conditions, for upon a continuance of those conditions must depend an unimpaired memory.

Absent-mindedness not being a disease, but a habit, can to a great extent be overcome by self-discipline. However engrossing a subject may be, yet it can usually be dispelled by a proper effort of the will. And if not at first, it can be after sufficient practice.

That the energies of the mind may not be dissipated the mind should not be allowed to busy itself with more than one thing at a time, and should occupy itself with each thing only at the proper time. When a subject shall have been reflected upon for as long a time as there is desire or opportunity, it should be banished by an effort of the will, that the mind may be left free to contemplate whatever may be presented to it afterwards. Thus may be obviated many an awkward situation which the absent-minded person is apt to encounter. Let the mind be first divested of that with which it is occupied—then it is in proper condition to receive new ideas.

In striking contrast with absent-mindedness, which vagary of the memory is of such universal distribution and often causes the most embarrassing situations, is

that something which influences—yea, compels—our memory to keep something that we would far rather get rid of! and the more vigorously we struggle to banish it, the more obstinately does it refuse to depart! La Bruyère has said most truly: "To endeavor to forget any one is the certain way to think of nothing else!"

It is indeed a curious fact that while the power to revive in our consciousness experiences and impressions of the past is partially under control of the will, yet the ability to eradicate them from the memory we do not possess. There are experiences in our lives which we would gladly blot out forever from remembrance, but the more we strive to do this, the more they will insist on keeping in the very foreground of memory, in spite of the fact that one of the fortunate missions of Time is to mitigate the memories of life's unhappy experiences, gradually softening their asperities and engirding them with an ever-growing glamour of sentimental disguise, until, transmuted by the magic alchemy of Time, that which once caused only disappointment and distress becomes attired in the garb of romantic association, embellished by the glowing hues of Fancy; in the place of former vexations and regrets there being ineffable serenity, and even delightful contemplation.

But time is not always so generous with its benefactions; there are sometimes wounds that will not heal; sorrows whose shadows seem to never grow less; sombre memories over which the soothing touch of

Time seems to exert but little influence. Then there are trivialities of life—events of no real significance—idle fancies—"stale, flat and unprofitable" conceits merged into expression, that deserve not even the most obscure corner in memory's repository; how many of them *do* somehow manage to find an asylum in our remembrance! Like Banquo's ghost, they will not "down;" like Sinbad's "Old Man of the Sea," we cannot shake them off! Fate seems to have ordained that we must tolerate them, so there is apparently no alternative but to be philosophical and accept the inevitable; as it is in the order of nature that weeds must grow in every garden, so too does nature seem to insist that weeds must spring up in the garden of Memory. Like certain insects they may become full-grown all at once, but like the tortoise they are only too likely to be as long-lived as we ourselves, and we should therefore take no especial pains to cultivate them—in the hope that by the kindness of fate more or less of them may soon go into a hopeless decline!

Priceless though the art of recollecting may be, yet that of forgetting is by no means of slight insignificance. The poet Landon has well said:

"Were it not better to forget,
Than but remember and regret?"

And Ninon de L'Enclos, the great French society leader of the seventeenth century, once said: "Memory is ever active, ever true; alas! if it were only easy to forget!" Whether the famous Frenchwoman ever discov-

ered the secret or not, history has failed to record—but it is highly improbable that her desire was attained; for had it been, how could she, in the exuberance of her joy, have neglected to leave the prescription to posterity!

The truth is that the art of forgetting does not require a volume for its elucidation—which is simplicity itself; just like the Scriptural injunction to "Love your enemies"—the real problem is, how to practice it! There is only one way to free ourselves from painful memories, and that is, on their appearance to force ourselves to contemplate other subjects, no matter what, so that they are worthy and not depressing; to say more than this is unnecessary, except that the facility to banish unhappy memories may be greatly increased through practice, even though such memories may not be totally destroyed.

And what shall we say of that which, for want of a better name, has been termed "Pseudo"-memory? It is a memory that is wholly instinctive in its character—a caprice of nature for which there seems to be no way of accounting except on the theory of heredity. Of this kind of memory many remarkable cases are related, among which are the following:

A young man, born in India, who was visiting England for the first time, accepted an invitation to spend a few days at the house of a relative in London. He had scarcely entered the door when it seemed to him that the place had a familiar aspect, although he

could not at first trace the association to any definite source, and could not identify any particular object about the premises that he had seen before. As the moments passed on this sense of familiarity with his surroundings kept growing within him, until he exclaimed: "The impression forces itself upon me that I have been in this house before, and yet I know that to be impossible, as I have never been in England until now—much less this particular house in London; and yet this impression is so strong that I am bewildered. But a sudden thought strikes me! If this house be the one which seems so familiar to me, there is a name cut with a diamond in one of the lower panes of the right-hand window in the front part of the attic." The parties at once proceeded to the room mentioned, and in the very place indicated was a name so scrawled on one of the window-panes! On investigation it was learned that one of the young man's ancestors, long since deceased, had cut with a diamond in that very window the name of his sweetheart!

Another case is that of a noted artist, who tells that once, as by inspiration, he drew a picture of a young lady's face whose lineaments seemed perfectly familiar to him. Years afterwards, while on a visit for the first time to a relative who lived in the country, he discovered the identical face among the portraits of his ancestors. He was so struck with the coincidence that he made inquiries regarding the identity of the person, and learned that his grandfather had once

been engaged to the lady, but through the strenuous opposition of relatives had been obliged to give her up.

Here is another remarkable case. Some years ago a gentleman who was a native of one of the New England States, took a trip to England, and while there paid a visit to the place where his ancestors had lived for several generations. Some of the features in the locality seemed strangely familiar to him, among them being the old family mansion and the village church, as well as certain details of the landscape. One day while wandering through the churchyard, a name on one of the tombstones especially attracted his notice, as it seemed as if he had seen it before. On making inquiry he learned that the young lady who was buried there had been a *fiancé* of his great-grandfather, who used to make frequent visits to his loved one's tomb.

Members of the faculty in the Medical College where the eminent surgeon Dr. Butcher of Dublin, studied, say that when he first began to experiment with the dissecting-knife, he appeared to handle it and to go about his work as if by instinct, in the same peculiar manner as one of his ancestors.

How, indeed, can we account for such cases as the above except on the theory of hereditary memory? Wordsworth has finely said:

"Our birth is but a sleep and a forgetting;
The soul that rises with us, our life's star,
Hath had elsewhere its setting
And cometh from afar."

Is it not in consonance with strict reasoning that such a thing as hereditary memory is possible? May not the memory of something that powerfully affects us be transmitted to a descendant? What is instinct in the animal kingdom but hereditary memory in a restricted sense? In the human being it is the memory of a specific event or impression, and in the animal of a characteristic or an acquirement. That the latter may be transmitted to offspring has been abundantly demonstrated, especially in the case of dogs. Darwin gives an instance of some dogs that were taken to Central America and trained to hunt deer in a particular way. Afterwards when their progeny were taken out for the same purpose, they at once adopted the newly-acquired methods of their parents without the slightest training.

When a person who has "declined into the vale of years" takes now and then a retrospect of the past, it is curious to note how much of his life he remembers little or nothing about—he finds that it really consists of many series of recollections separated by a corresponding number of intervals, many of them extending over a long period and leaving scarce an imprint on his memory; in fact, he finds the greater part of his life to be a comparative blank; there are only the landmarks, scattered along here and there, and most of them keep growing less and less distinct as time speeds on; but ever and anon, as by strange fortuity, there will be touched by an unseen hand some secret spring

of Memory's treasure-house, and, as the oasis amid the desert sands burst forth in all its beauty on the longing vision of the weary traveler, to cheer and to invigorate his spirits, so too, bright images of scenes long past, and tender thoughts, and glowing fancies, that have long lain dormant, awaiting but the proper summons, will leap forth from the dim recesses of the recollection as by magic, imbued with all their former loveliness and freshness, each one, forsooth, ordained to add one more bright beauty spot to the enchanting landscape of Memory.

INDEX.

A

Absent-mindedness, instances of, ... 459-463
how to overcome, ... 465
Almansor, linguistic powers of, ... 28
Alpha Crucis, location of, ... 157
Anecdotes, often useful, ... 318
how usually recollected, ... 318, 319
may be indefinitely retained in memory, ... 319
best way to memorize, ... 320, 321
Angelo, anecdote of, ... 169
Aristotle, great memory of for proper names, ... 387
Association next to Attention in memory development, . 109
anecdote regarding power of, ... 111
Incidental Association, definition of, and illustrations, 113-115
Natural Association, definition of, and illustrations, . 116-122
Artificial Association, definition of, and illustrations, . 125-130
Associations should be in pairs, ... 132
Attention the foundation of Memory, ... 98
lack of, mainly cause of defective memory, ... 104
cultivated, merges into Concentration, ... 101
becomes habit, ... 104
may be secured by Will, ... 106
illustrations of, ... 101
Avicenna, wonderful verbal memory of, ... 37
Azimuths of sun at sunset, ... 160

B

Baratière, precocity of, ... 47
Bassie, memory feats of, ... 181

Beethoven, great musical memory of, ... 414
Bidder, mathematical feats of, ... 184
Biography, best memorized through mental images, . . 301
Blaine, wonderful memory of for proper names, . . 387
great feat of in verbal memorizing, ... 356
Blank Verse, how to memorize, ... 379, 380
Blind Tom, wonderful musical memory of, ... 28
Bolingbroke, great memory of, ... 41
Book, instructive, how to memorize, ... 305
Books, what kind to read, ... 309
Bossuet, wonderful verbal memory of, ... 41
Brahe, wonderful memoy of for figures, ... 181
Brodie, Steve, sensations of while jumping from Brooklyn Bridge, ... 24
Buffon, great verbal memory of, ... 39
Bulwer, remarkable verbal memory of, ... 38
Burritt, linguistic powers of, ... 40
Buxton, mathematical feats of, ... 184
Byron, great verbal memory cf, ... 39

C

Cæsar, great memory of, ... 35
Carlisle, John G., wonderful memory feat of, . . . 357
Carolan, feat of in musical-memory, ... 414
Charlemagne, linguistic powers of, ... 37
Cineas, memory feat of, ... 387
Clarke, Adam, great verbal memory of, ... 352
Clarkson, how he became interested in abolition of slavery, 290
Clay, anecdote of, ... 173
remarkable memory of for proper names, . . . 387
Cleopatra, linguistic powers of, ... 35
Colburn, mathematical feats of, ... 185-187
Coleridge, Rev. E., strong verbal memory of, . . . 353
Color, Memory of, how to cultivate, ... 176
Colors which harmonize, ... 178
Consciousness—double, ... 457-459

Contiguity, Association by, ... 124
Contrariety, Association by, with illustrations, . . . 122-124
"Correlation" theory impracticable, ... 95
"Correlations," how used, ... 92
Crassus, linguistic powers of, ... 35
"Cross, Southern," 156
Custer, anecdote of, ... 146
Cuvier, great memory of, ... 40

D

Dase, wonderful memory of for figures, ... 182
Dates in history easily desert the memory, ... 201
Diction, Memory of, what it is, ... 349
memory of possessed by ancients, ... 352
inherent in some persons, ... 351
can be cultivated to a remarkable degree. . . . 351
Discourse, how to listen to, ... 314
Dorr, great memory of for figures, ... 183
Downs, memory-system of, ... 77
Drama, how to witness, ... 313

E

Edison, power of engrossment of, ... 102
Esdras, strong verbal memory of, ... 57
Euler, remarkable memory of for figures, ... 181
Events, three general classes of, ... 289
how to classify, ... 297

F

Facts more difficult to recollect than Events, . . . 295
best memorized through classification, . . . 296
to be classified according to individual needs, . . . 299
how to memorize, ... 298
Features, Memory of, how to cultivate, ... 175
Feinaigle, mnemonical system of, ... 70
Fellows, Col., strong verbal memory of, ... 357

Fiction, instructive as well as entertaining, . . . 303
best memorized through mental images. . . . 301
"Figure" alphabet, modern, ... 83
impracticable for memorizing dates, ... 87
basis of most mnemonical systems, ... 189
Figures, as important in memory culture as words, . . 180
best way to memorize, ... 190
Fomalhaut, location of, ... 159
Form, Memory of—definition of, ... 168
good memory of necessary to great painter or sculptor, 169
how to cultivate, ... 170
Fuller, great memory of, ... 43, 352

G

Gabelentz, linguistic powers of, ... 43
Gassendi, remarkable verbal memory of, ... 355
Genius prolonged attention, ... 103
Gibbon, great memory of, ... 39
method pursued by in reading a book, ... 304
Gottschalk, remarkable musical memory of, ... 416
Gouraud, mnemonical system of, ... 72
Gray, Dr. Asa, great memory of, ... 40
Grey, "Figure" alphabet of, ... 69

H

Heinecken, unexampled precocity of, ... 48
Henrotin, remarkable feat of in memory of figures, . . 183
Herschel, remarkable memory of for figures, . . . 180
Hicks, W. C., remarkable familiarity of with Bible, . 358
Historical Events less enduring in memory than Personal or Impersonal, ... 291
Hortensius, remarkable memory of, ... 35
Houdin, wonderful eye-memory of, ... 29
Howell, Evan S., wonderful faculty of for recalling personal events, ... 292
Hugo, extraordinary vocabulary of. 40

I

Ideas, isolated, cannot remain in memory, ... 112
"Impersonal" Events, definition of, ... 289
"Incidental" Association, definition of, and illustrations, . 113-115
Initials, how to memorize, ... 407

J

Jewell, Bishop, strong verbal memory of, ... 352
Johnson, Dr., illustration of his powers of verbal memory, 354
Jones, Sir William, linguistic powers of, ... 43
Jonson, Ben., remarkable verbal memory of, ... 38

K

Knowledge consists of what we can recollect, . . . 17
Kothe, mnemonical system of, ... 73

L

Lacépède, wonderful memory of, ... 44
La Motte, powerful verbal memory of, ... 41
Landor, remarkable memory of, ... 39
Lawson, Prof., great verbal memory of, ... 44
Leonardo da Vinci, method of for identifying faces, . . 174
Literature, entertaining, how to memorize, . . . 301
instructive, how to memorize, ... 305-7
what kind to read, ... 309
"Locality" Memory, definition of, ... 144
may be developed to a remarkable degree, . . . 147
how to cultivate, ... 154, 165
universal in animal kingdom, ... 144
Loisette, mnemonical system of, ... 75

M

McCartney, Daniel, remarkable faculty of for recollecting personal events, ... 291
Macaulay, strong verbal memory of, ... 353
Magliabechi, great memory of, ... 40
Magnetic needle, variation of at various points, . . 153

Magnetic poles, where situated, ... 152
Mangiamele, remarkable memory of for figures, . . 182
Memories, unpleasant, how to lessen, ... 467
Memory the basis of understanding, ... 16
essential to intellectual power, ... 26
possessed by all living things, ... 19
improved by exercise, ... 18
possible because ideas suggest ideas, ... 112
grasps what it has the greatest affinity for, . . . 19
greatest possessed by greatest men, ... 32
only best and greatest thoughts deserve a place in, . 350
may acquire deleterious habits, ... 107
defective, mainly due to lack of attention, . . . 104
general divisions of, ... 142
sometimes treacherous, ... 447
instances of partial lapse of, ... 453-457
instances of loss of, ... 449-453
curious recovery of, ... 25
"Pseudo," instances of, ... 468-470
"Memory Corner" Thompson, feat performed by, . . 163
Mendelssohn, feats of in musical memory, ... 416
Mezzofanti, linguistic powers of, ... 27, 39
Middleton, mnemonical system of, ... 74
Miles, mnemonical system of, ... 72
Mill, John Stuart, great precocity of, ... 47
Milton, extraordinary vocabulary of, ... 41
Mithridates, great verbal memory of, ... 35
Mnemonics, recognized as a necessity from earliest times, 58
originated with Simonides, ... 62
"Topical" system, ... 63
Molino, wonderful verbal memory of, ... 355
Mozart, feats of in musical memory, ... 415
Müller, linguistic powers of, ... 40
Music, definition of, ... 411
demands of upon memory often great, ... 413
memory of largely intuitive, ... 413

Music, influence of on the emotions, ... 430
aids memorizing of Poetry, ... 430
what kind to select, ... 427, 428
how to memorize, ... 420-427, 436, 437
how to listen to, ... 439-444
necessity of reviewing one's acquirements in, . . 438
Musical memory necessary to become great artist, . . 417

N

Names more difficult to recollect than faces, ... 383
good memory for advantageous in business, social and literary life, ... 385
few persons have good memory of, ... 388
origin of many. 389
how to memorize, ... 391, 401-406
Napoleon, remarkable memory of for figures, . . . 180
also for proper names, ... 387
Narrative, best memorized through mental images, . . 301
"Natural" Association, definition of, and illustrations, . 116-122
Newspaper reading, effect of on memory, ... 309
Niebuhr, precocity of, ... 41
Numbers, best way to memorize, ... 190

O

Observation the key to good "Locality" memory, . . 148

P

Palmer, Edward Henry, linguistic powers of, . . . 43
Paris, Aimé, mnemonical system of, ... 71
Pascal, great verbal memory of, ... 38
Pericles, remarkable memory of, for proper names, . . 387
"Personal" Events more enduring in memory than "Impersonal" or "Historical," 290
Piano compositions, how to memorize, ... 420-427
Pick, mnemonical system of, ... 73
Poem, ability to readily dissect of assistance in memorizing, 370

Poetry less difficult to memorize than Prose, . . . 358
how to memorize, ... 371-377, 379, 380
Polaris, how to find, ... 154
Poles, magnetic, where situated, ... 152
Porson, wonderful verbal memory of, ... 45
Poule, great verbal memory of, ... 39
Prescott, extraordinary memory of, ... 44
Prose more difficult to memorize than Poetry, . . . 358
how to memorize, ... 381
"Pseudo"-memory. instances of, ... 468-470

R

Raleigh, anecdote of, ... 22
Ravenna, mnemonical feats of, ... 65
Rossi, wonderful verbal memory of, ... 45

S

Sambrook, mnemonical system of, ... 74
Saunderson, great verbal memory of, ... 39
Scaliger, remarkable verbal memory of, ... 38
Schenkel, mnemonical feats of, ... 66
Scott, great verbal memory of, ... 38
"Selecting" memory, ... 311
Seneca, strong verbal memory of, ... 36
Shakespeare, unequaled vocabulary of, ... 41
Shedd, mnemonical system of, ... 76
"Sight" impressions passive in their nature, . . . 134
most enduring of all, ... 135
Simonides, originator of mnemonics, ... 62
Socrates, wonderful power of engrossment, ... 102
Song, influence of on the emotions, ... 430
Songs, interpretation of should be faithful, ... 433
how to memorize, ... 436, 437
"Sound" impressions passive in their nature, . . . 134
next to "Sight" impressions in vividness, . . . 135
Star, North, how to find, ... 154

Stokes, mnemonical system of, ... 73
Stradella, musical composer—anecdote of, ... 431
Suarez, wonderful verbal memory of, ... 353
Sunset *Azimuths*, ... 160

T

Taylor, Jeremy, great memory of, ... 44
Thirlwall, Bishop, great precocity of, ... 47
Thompson, "Memory Corner," feat performed by, . . 163
"Thought" impressions either passive or active, . . . 134
least enduring of all, ... 138
Tom (Blind), wonderful musical memory of, . . . 28, 416
"Topical" system, mnemonics, ... 63
not now feasible, ... 80
"Twain, Mark," experience of in learning vocation of pilot, 29

V

"Verbal" memory, definition of, ... 349
inherent in some persons, ... 351
great power of possessed by ancients, ... 352
can be cultivated to a remarkable degree, . . . 351
Verse, how to memorize, ... 371-377
Vianesi, remarkable musical memory of, ... 416
Vidocq, anecdote of, ... 173

W

Wakefield, Gilbert, powerful verbal memory of, . . 353
Wallis, wonderful memory of for figures, ... 181
Watson, George, wonderful faculty of recalling personal events, ... 291
Weed, Thurlow, plan adopted by for memorizing personal events, ... 293
Wesley, memory of for proper names, ... 387
Will, attention secured by, ... 106
Willis, mnemonical system of, ... 67
Winckelmann, "figure" alphabet of, ... 68, 189
Woodfall, great verbal memory of, ... 27
Wotton, precocity of, ... 46